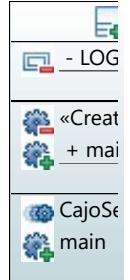
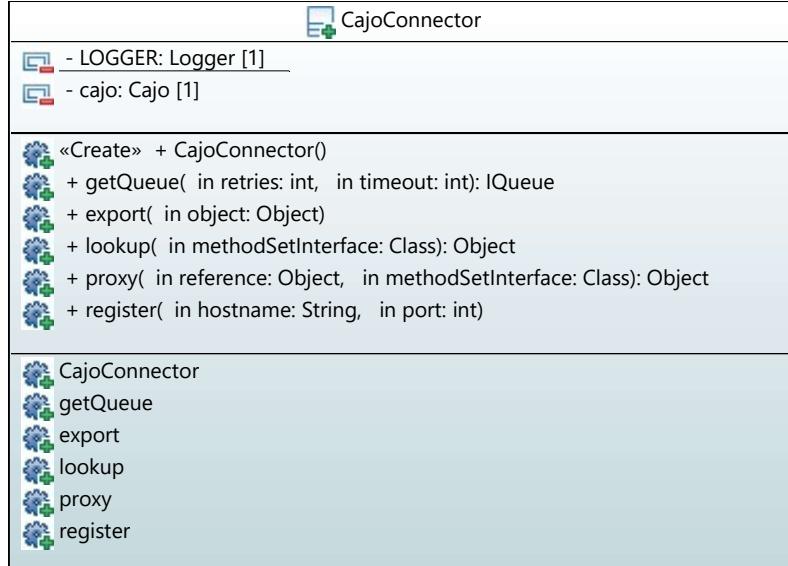
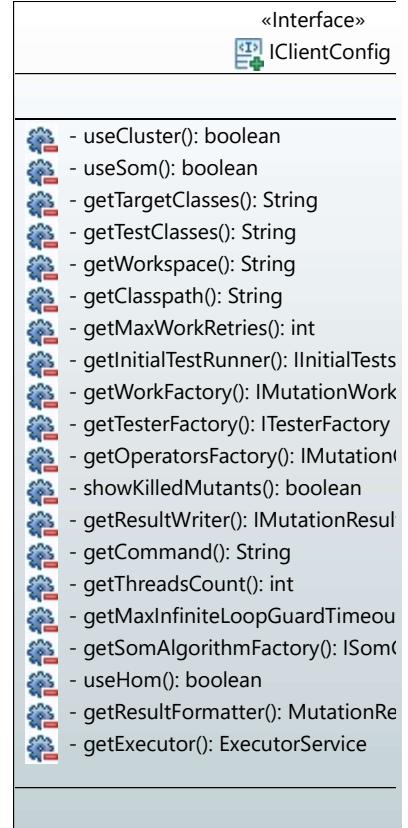
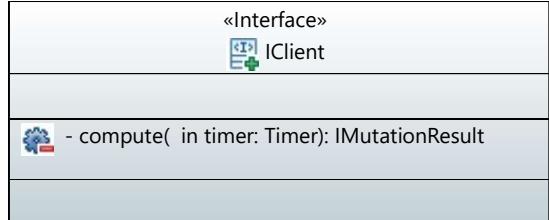
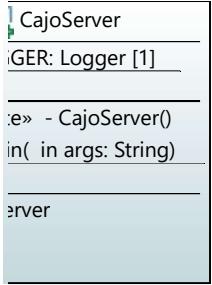


ption
—
in cause: Throwable)
in message: String)





Runner
:Factory

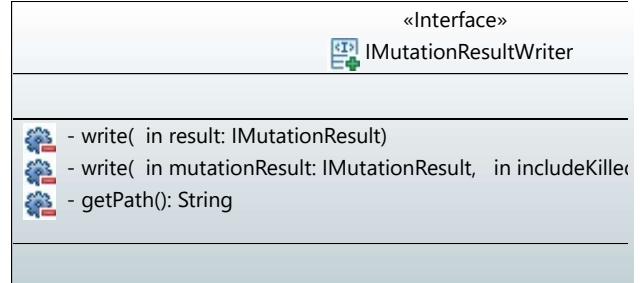
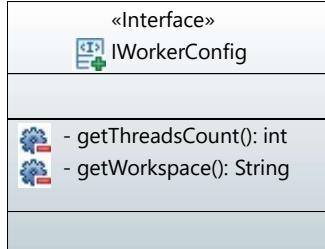
OperatorsFactory

tWriter

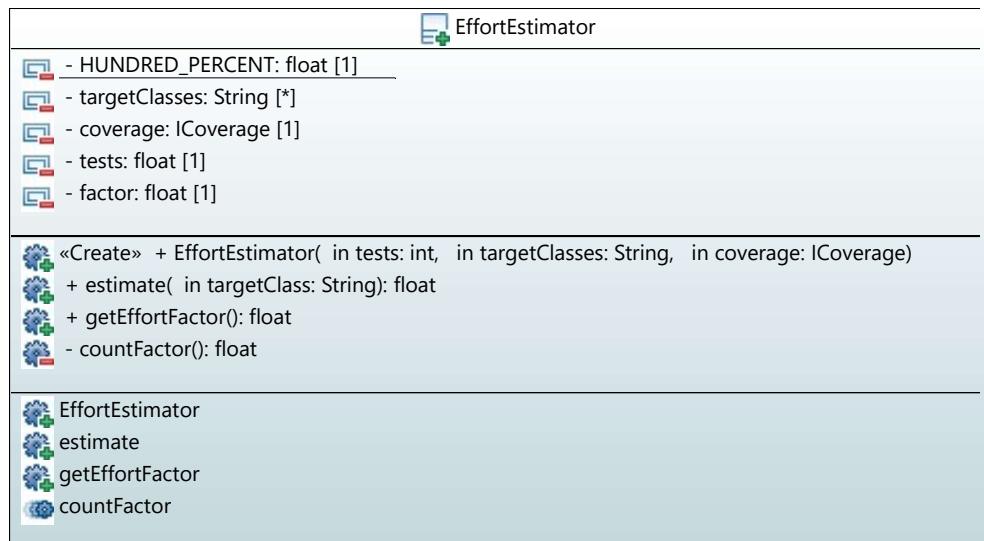
t(): long

GeneratorFactory

resultFormatter



dMutatns: boolean)

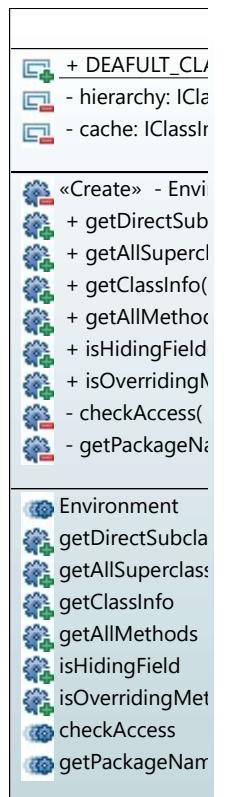
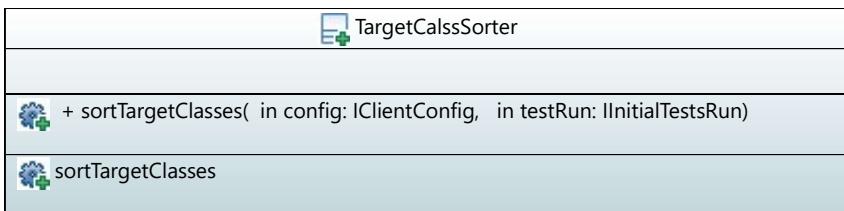


ClassInfoVisitor

- access: int [1]
- name: String [1]
- signature: String [1]
- superName: String [1]
- interfaces: String [*]
- fields: IFieldInfo [*]
- methods: IMethodInfo [*]

«Create» + ClassInfoVisitor()
+ getClassInfo(): IClassInfo
+ visit(in version: int, in access: int, in name: String, in signature: String, in superName: String, in interfaces: String)
+ visitAnnotation(in desc: String, in visible: boolean): AnnotationVisitor
+ visitAttribute(in attr: Attribute)
+ visitField(in access: int, in name: String, in description: String, in signature: String, in value: Object): FieldVisitor
+ visitInnerClass(in name: String, in outerName: String, in innerName: String, in access: int)
+ visitMethod(in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): MethodVisitor
+ visitOuterClass(in owner: String, in name: String, in desc: String)
+ visitSource(in source: String, in debug: String)
+ visitEnd()

ClassInfoVisitor
+ getClassInfo
+ visit
+ visitAnnotation
+ visitAttribute
+ visitField
+ visitInnerClass
+ visitMethod
+ visitOuterClass
+ visitSource
+ visitEnd



Environment

ASSINFO_CACHE_SIZE: int [1]

ssHierarchy [1]

foCache [1]

ronment(in cache: IBytecodeCache, in hierarchy: IClassHierarchy)

lasses(in className: String): String

lasses(in className: String): String

in className: String): IClassInfo

ds(in className: String): IMethodInfo

(in className: String, in fieldName: String, in fieldDesc: String): boolean

Method(in className: String, in methodName: String, in methodDesc: String): boolean

in superAccess: int, in access: int, in superClassClassName: String, in className: String): boolean

ame(in className: String): String

sses

ses

:hod

ne

 - cache: IBytecodeCache

 - tests: IInitialTests

 «Create» + TargetC

 + compare(in clas

 - getSize(in clas

 - getDuration(in c

 TargetClassCompar

 compare

 getSize

 getDuration



TargetClassComparator

Cache [1]

Run [1]

lassComparator(in cache: IBytecodeCache, in tests: IInitialTestsRun)

s1: String, in class2: String): int

Name: String): int

lassName: String): long

ator



WriterException

- serialVersionUID: long [1]

«Create» + WriterException(in message: String)

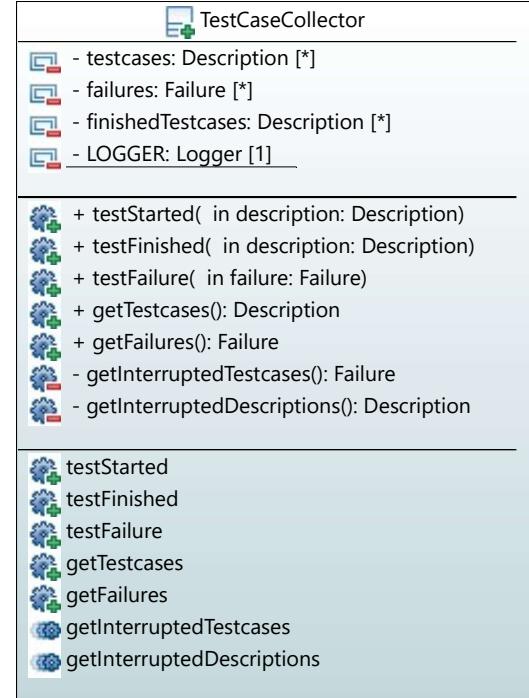
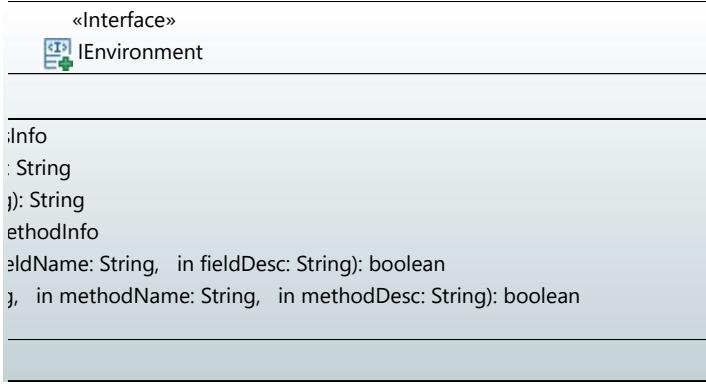
«Create» + WriterException(in cause: Throwable)

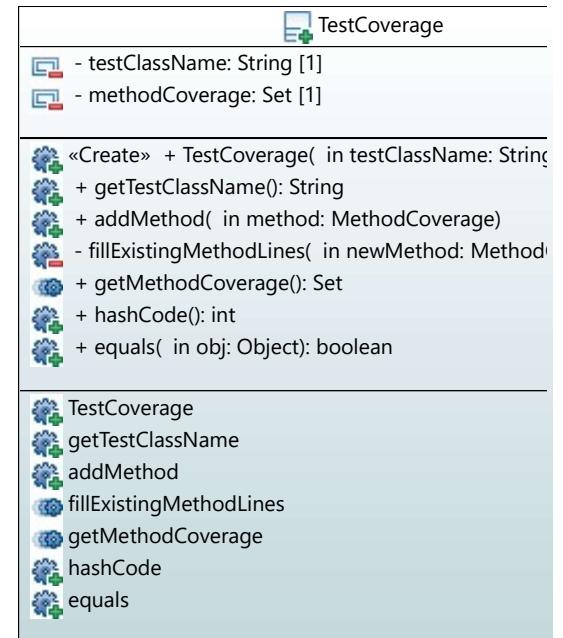
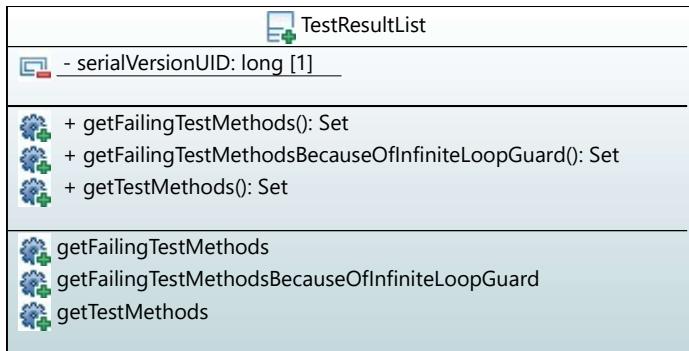
WriterException

WriterException

 MutationException
 - serialVersionUID: long [1]
 «Create» + MutationException(in message: String)  «Create» + MutationException(in cause: Throwable)
 MutationException  MutationException

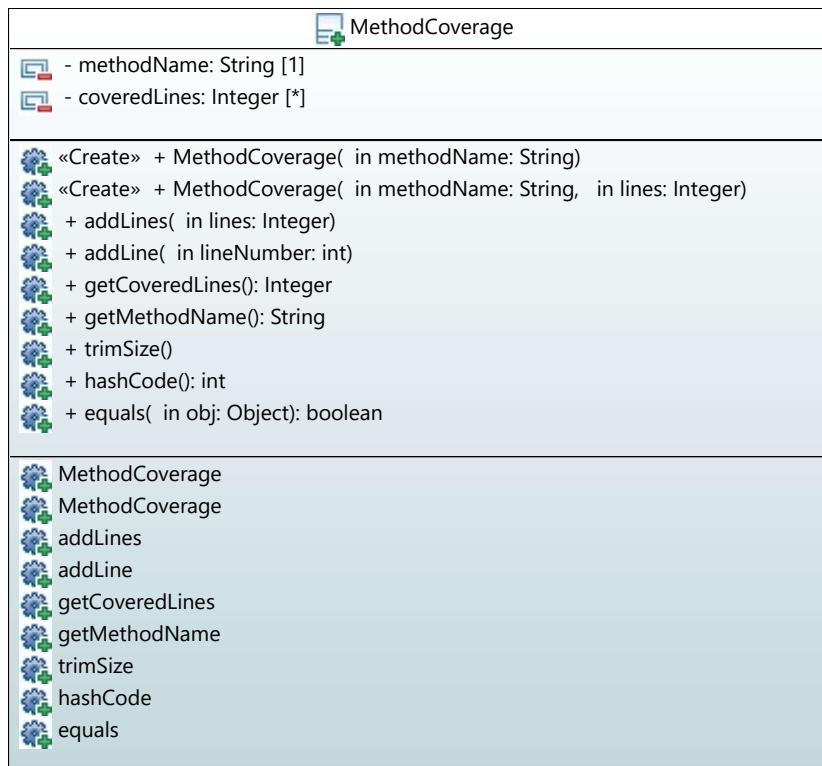
 - getClassInfo(in className: String): IClass  - getAllSuperclasses(in className: String): IClass  - getDirectSubclasses(in className: String): IClass  - getAllMethods(in className: String): IMe...  - isHidingField(in className: String, in file: String): Boolean  - isOverridingMethod(in className: String, in file: String): Boolean

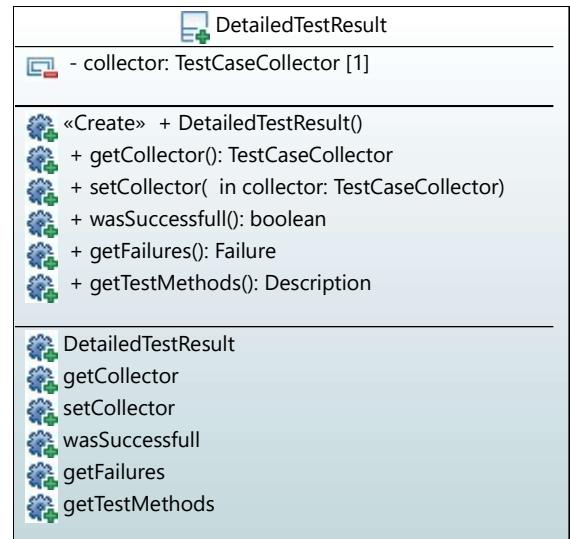
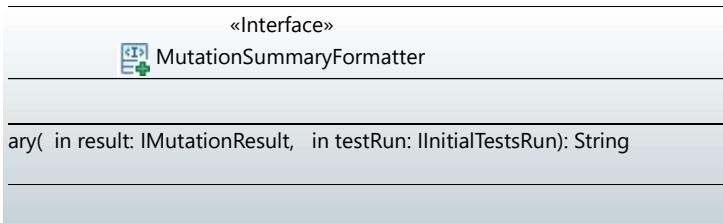




3)

Coverage)





CoverageAnalyzer

- cache: IBytecodeCache [1]
- coverage: ICoverage [1]
- LOGGER: Logger [1]

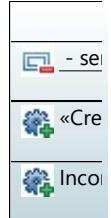
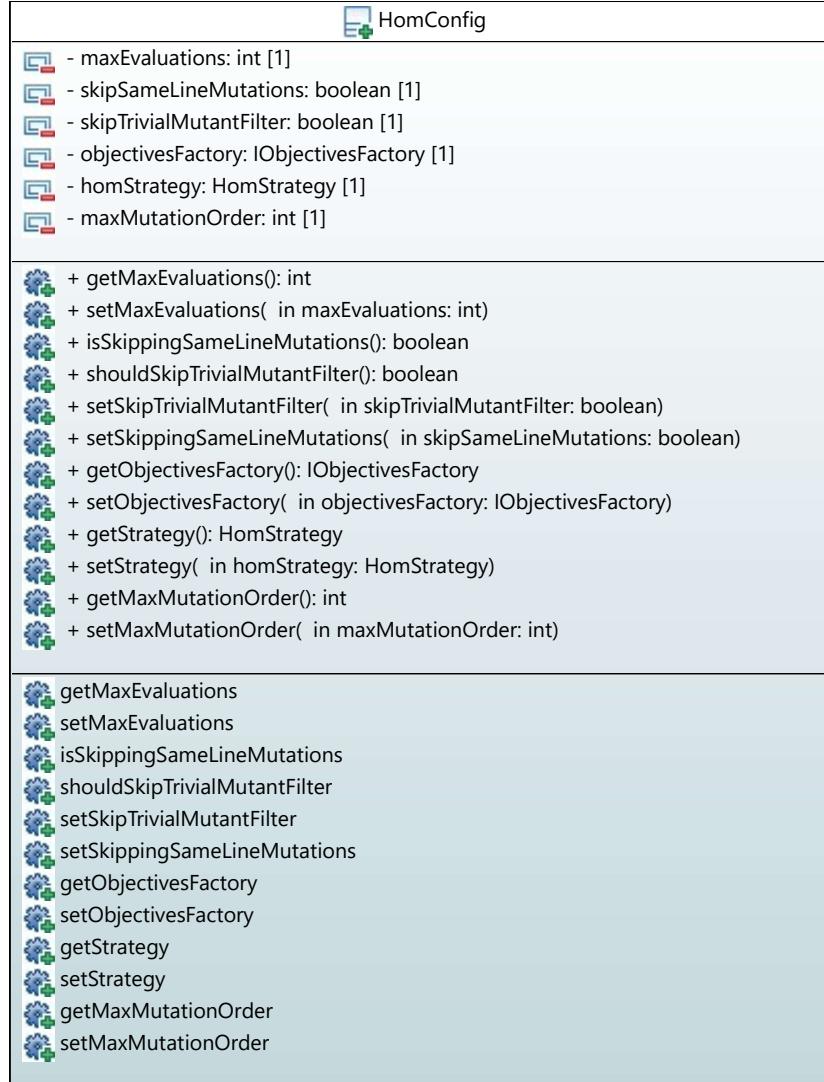
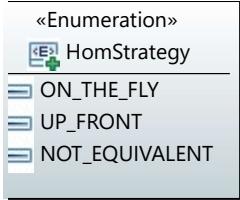
«Create» + CoverageAnalyzer(in cache: IBytecodeCache, in coverage: ICoverage)
+ analyze(in testClass: String, in testMethod: String, in executionData: ExecutionDataStore)
- analyzeSourceClasses(in testClass: String, in analyzer: Analyzer)
- saveCoverage(in testClass: String, in testMethod: String, in coverageBuilder: CoverageBuilder)
- getClassName(in cc: IClassCoverage): String
createAnalyzer(in executionData: ExecutionDataStore, in coverageBuilder: CoverageBuilder): Analyzer
createBuilder(): CoverageBuilder
- getCoveredLines(in testMethod: String, in cc: IClassCoverage): MethodCoverage
- isLineCovered(in line: ILine): boolean

CoverageAnalyzer
analyze
analyzeSourceClasses
saveCoverage
getClassName
createAnalyzer
createBuilder
getCoveredLines
isLineCovered

 TestMethodFilter
 - DESCRIPTION: String [1]  - testMethods: Set [1]
 «Create» + TestMethodFilter(in testMethods: Set)  + shouldRun(in description: Description): boolean  + describe(): String
 TestMethodFilter  shouldRun  describe

 TestCasesFinder
 «Create» - TestCasesFinder()  + findTestMethods(in clazz: Class): Set  - isTest(in m: Method): boolean  - isJUnit4Test(in m: Method): boolean  - hasValidSignature(in m: Method): boolean  - isJUnit3Test(in m: Method): boolean  - isVoid(in m: Method): boolean  - hasNoArguments(in m: Method): boolean  - isPublic(in m: Method): boolean
 TestCasesFinder  findTestMethods  isTest  isJUnit4Test  hasValidSignature  isJUnit3Test  isVoid  hasNoArguments  isPublic

MutationInfo
<ul style="list-style-type: none">- operator: IMutationOperator [1]- mutationPointIndex: int [1]- mutantIndex: int [1]
<ul style="list-style-type: none">«Create» + MutationInfo(in operator: IMutationOperator, in mutationPointIndex: int, in mutantIndex: int)+ getMutationPointIndex(): int+ getMutantIndex(): int+ getOperator(): IMutationOperator+ hashCode(): int+ equals(in obj: Object): boolean+ toString(): String
<ul style="list-style-type: none">MutationInfogetMutationPointIndexgetMutantIndexgetOperatorhashCodeequalstoString





IncompatibleMutationException

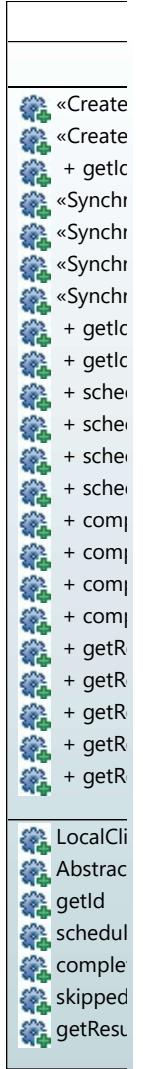
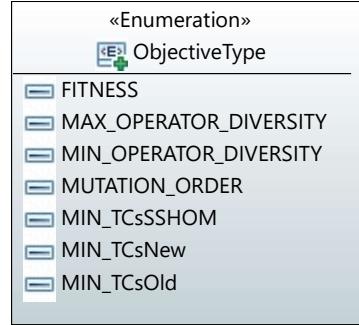
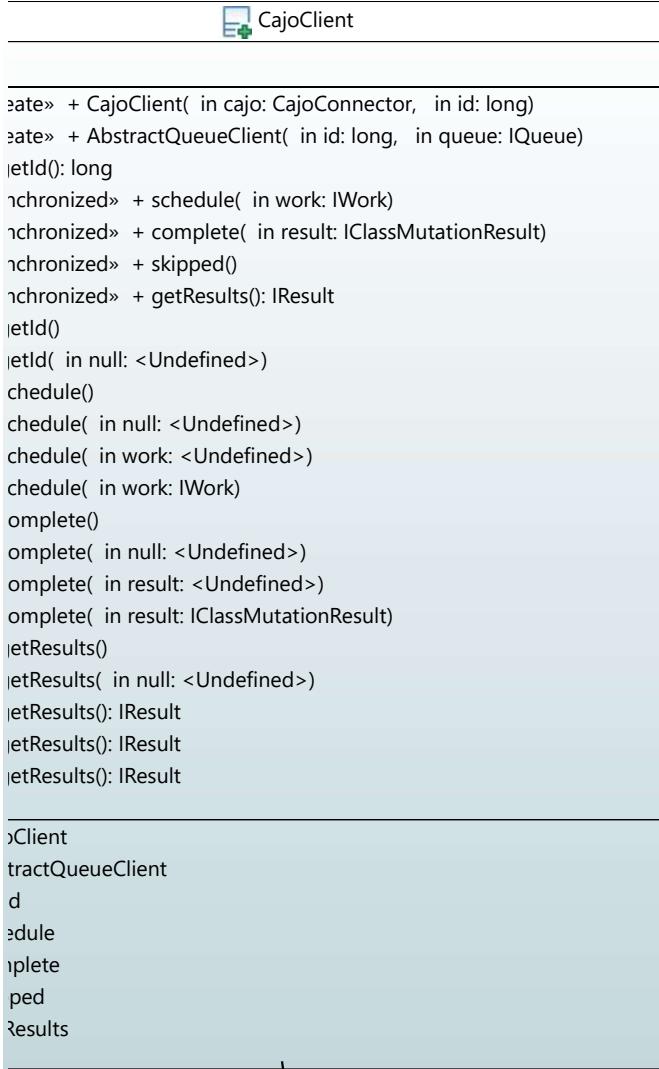
rialVersionUID: long [1]

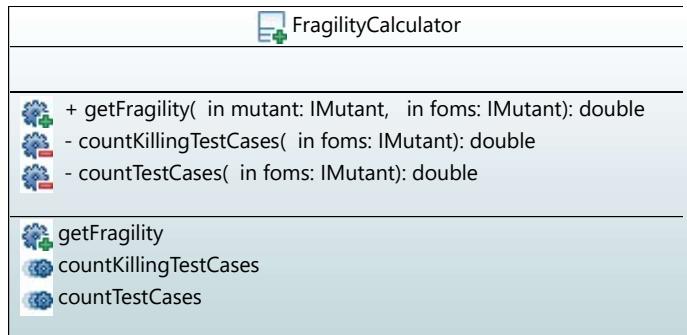
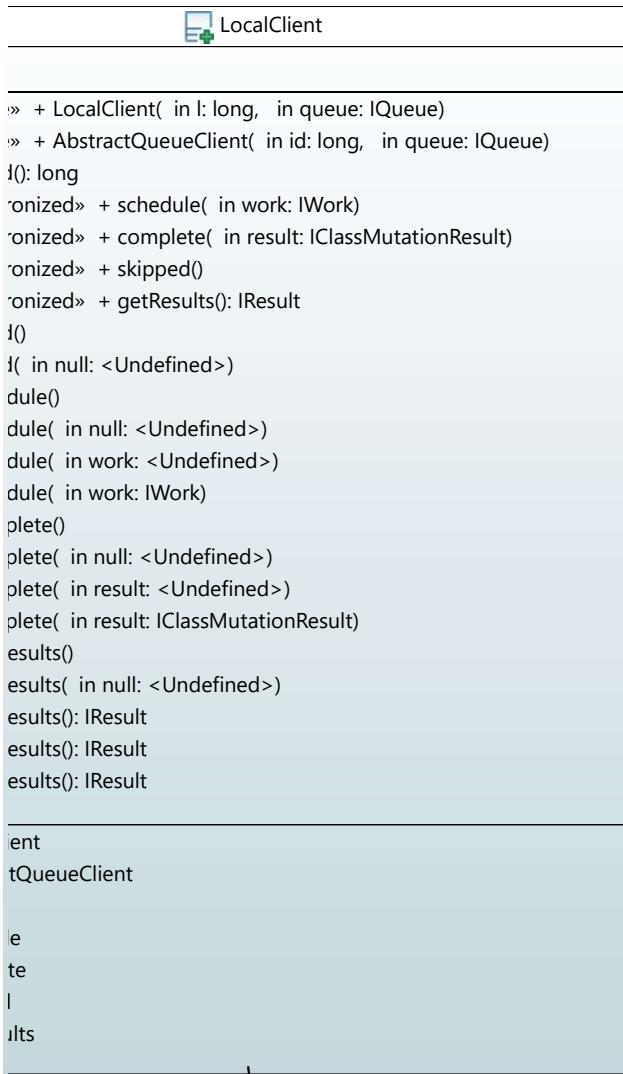
ate» + IncompatibleMutationException(in operator: String, in mutationPointIndex: int, in mutantIndex: int)

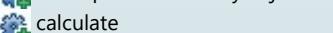
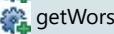
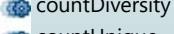
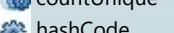
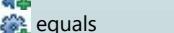
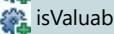
IncompatibleMutationException

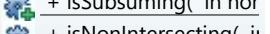
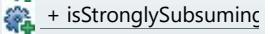
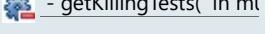
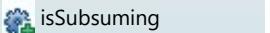
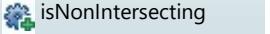
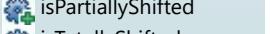
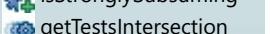
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 MinOperatorDiversityObjective
<pre>  «Create» + MinOperatorDiversityObjective(in description: String)  + calculate(in hom: IMutant, in foms: IMutant, in order: int): double  «Create» + MaxOperatorDiversityObjective(in description: String)  + calculate(in hom: IMutant, in foms: IMutant, in order: int): double  + getWorstValue(): double  + getDescription(): String  + hashCode(): int  + equals(in obj: Object): boolean  + isValuable(in value: double): boolean </pre>
<pre>  MinOperatorDiversityObjective  calculate  MaxOperatorDiversityObjective  calculate  getWorstValue  getDescription  countDiversity  countUnique  hashCode  equals  isValuable </pre>

 «Create» - HomTypeVe
 + isSubsuming(in hor
 + isNonIntersecting(ii
 + isPartiallyShifted(in h
 + isTotallyShifted(in h
 + isStronglySubsuming
 - getTestsIntersection(
 - getKillingTests(in mu
 HomTypeVerifier
 isSubsuming
 isNonIntersecting
 isPartiallyShifted
 isTotallyShifted
 isStronglySubsuming
 getTestsIntersection
 getKillingTests

HomTypeVerifier

```
Verifier()
n: IMutant, in foms: IMutant): boolean
n hom: IMutant, in foms: IMutant): boolean
hom: IMutant, in foms: IMutant): boolean
om: IMutant, in foms: IMutant): boolean
}( in hom: IMutant, in foms: IMutant): boolean
in foms: IMutant): Set
Mutant: IMutant, in foms: IMutant): Set
```

LastToFirstABCSt

```
+ create( in orginFoms: IMutant, in operators: IMutationOperator): IMutant
 # getNextFomIndex( in foms: IMutant): int
 + create( in foms: IMutant, in operators: IMutationOperator): IMutant
 # getNextFomIndex( in foms: IMutant): int
 + doMutant( in foms: IMutant, in operators: IMutationOperator): IMutant
 + create( in foms: IMutant, in operators: IMutationOperator): IMutant
 + findNearestMutationPoint( in fom: IMutant, in bytecode: byte, in mu
 + create()
 + create( in null: <Undefined>)
 + create(): IMutant
 + create(): IMutant
 + create(): IMutant
 + create( in null: <Undefined>): IMutant
 + create( in foms: <Undefined>): IMutant
 + create( in foms: IMutant): IMutant
 + create( in foms: IMutant): IMutant
 + create( in foms: IMutant): IMutant
 + create( in foms: IMutant, in null: <Undefined>): IMutant
 + create( in foms: IMutant, in operators: <Undefined>): IMutant
 + create( in foms: IMutant, in operators: IMutationOperator): IMutant
 + create( in foms: IMutant, in operators: IMutationOperator): IMutant
 + create( in foms: IMutant, in operators: IMutationOperator): IMutant
```

```
create
getNextFomIndex
create
doMutant
findNearestMutationPoint
```

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nt

itationOperators: IMutationOperator): MutationInfo

LastToFirst

+ create(in orginFoms: IMutant, in operators: IMutationOpera
getNextFomIndex(in foms: IMutant): int
- sort(in mutants: IMutant)
+ create(in foms: IMutant, in operators: IMutationOperator): Il
getNextFomIndex(in foms: IMutant): int
+ doMutant(in foms: IMutant, in operators: IMutationOperat
+ create(in foms: IMutant, in operators: IMutationOperator): IM
+ findNearestMutationPoint(in fom: IMutant, in bytecode: byt
+ create()
+ create(in null: <Undefined>)
+ create(): IMutant
+ create(): IMutant
+ create(): IMutant
+ create(in null: <Undefined>): IMutant
+ create(in foms: <Undefined>): IMutant
+ create(in foms: IMutant): IMutant
+ create(in foms: IMutant): IMutant
+ create(in foms: IMutant): IMutant
+ create(in foms: IMutant, in null: <Undefined>): IMutant
+ create(in foms: IMutant, in operators: <Undefined>): IMut
+ create(in foms: IMutant, in operators: IMutationOperator): Il
+ create(in foms: IMutant, in operators: IMutationOperator): Il
+ create(in foms: IMutant, in operators: IMutationOperator): Il

create
getNextFomIndex
sort
create
doMutant
findNearestMutationPoint

SortedABCStrategy

tor): IMutant

Mutant

or): IMutant
lutan
e, in mutationOperators: IMutationOperator): MutationInfo

nt
Mutant
Mutant
Mutant

+ create(in orginFoms: IMutant, in operators: IM
+ # getNextFomIndex(in foms: IMutant): int
+ create(in foms: IMutant, in operators: IMutat
+ # getNextFomIndex(in foms: IMutant): int
+ doMutant(in foms: IMutant, in operators: IMut
+ create(in foms: IMutant, in operators: IMutati
+ findNearestMutationPoint(in fom: IMutant, in
+ create()
+ create(in null: <Undefined>)
+ create(): IMutant
+ create(): IMutant
+ create(): IMutant
+ create(in null: <Undefined>): IMutant
+ create(in foms: <Undefined>): IMutant
+ create(in foms: IMutant): IMutant
+ create(in foms: IMutant): IMutant
+ create(in foms: IMutant): IMutant
+ create(in foms: IMutant, in null: <Undefined>
+ create(in foms: IMutant, in operators: <Undef
+ create(in foms: IMutant, in operators: IMutati
+ create(in foms: IMutant, in operators: IMutati
+ create(in foms: IMutant, in operators: IMutati

create
getNextFomIndex
create
doMutant
findNearestMutationPoint



LastToFirstCStrategy

```
utationOperator): IMutant  
  
onOperator): IMutant  
  
tationOperator): IMutant  
nOperator): IMutant  
bytecode: byte, in mutationOperators: IMutationOperator): MutationInfo  
  
: IMutant  
ned>): IMutant  
nOperator): IMutant  
nOperator): IMutant  
nOperator): IMutant
```

```
+ create( in orginFoms: IMutant, in oper  
# getNextFomIndex( in foms: IMutant): i  
- sort( in mutants: IMutant)  
+ create( in foms: IMutant, in operators  
# getNextFomIndex( in foms: IMutant): int  
+ doMutant( in foms: IMutant, in opera  
+ create( in foms: IMutant, in operators:  
+ findNearestMutationPoint( in fom: IMu  
+ create()  
+ create( in null: <Undefined>)  
+ create(): IMutant  
+ create(): IMutant  
+ create(): IMutant  
+ create( in null: <Undefined>): IMutant  
+ create( in foms: <Undefined>): IMutan  
+ create( in foms: IMutant): IMutant  
+ create( in foms: IMutant): IMutant  
+ create( in foms: IMutant): IMutant  
+ create( in foms: IMutant, in null: <Unc  
+ create( in foms: IMutant, in operators:  
+ create( in foms: IMutant, in operators:  
+ create( in foms: IMutant, in operators:  
+ create( in foms: IMutant, in operators:
```

```
create  
getNextFomIndex  
sort  
create  
doMutant  
findNearestMutationPoint
```



LastToFirstSortedStrategy

```
rators: IMutationOperator): IMutant
    t

    : IMutationOperator): IMutant
    t

tors: IMutationOperator): IMutant
IMutationOperator): IMutant
    tant, in bytecode: byte, in mutationOperators: IMutationOperator): MutationInfo

    t

defined>): IMutant
: <Undefined>): IMutant
: IMutationOperator): IMutant
: IMutationOperator): IMutant
: IMutationOperator): IMutant
```

```
# getNextFomIndex( in fom
+ create( in foms: IMutant,
# getNextFomIndex( in foms
+ doMutant( in foms: IMutant,
+ create( in foms: IMutant,
+ findNearestMutationPoint
+ create()
+ create( in null: <Undefin
+ create(): IMutant
+ create(): IMutant
+ create(): IMutant
+ create( in null: <Undefin
+ create( in foms: <Udefin
+ create( in foms: IMutant):
+ create( in foms: IMutant):
+ create( in foms: IMutant):
+ create( in foms: IMutant,
```

```
getNextFomIndex
create
doMutant
findNearestMutationPoint
```

ClosePairStrategy

```
is: IMutant): int
    in operators: IMutationOperator): IMutant
    :: IMutant): int
        ant, in operators: IMutationOperator): IMutant
        in operators: IMutationOperator): IMutant
        ( in fom: IMutant, in bytecode: byte, in mutationOperators: IMutationOperator): MutationInfo
        :d>

        :d>): IMutant
        :ed>): IMutant
        IMutant
        IMutant
        IMutant
        in null: <Undefined>): IMutant
        in operators: <Undefined>): IMutant
        in operators: IMutationOperator): IMutant
        in operators: IMutationOperator): IMutant
        in operators: IMutationOperator): IMutant
```

```
+ create( in orginF
+ # getNextFomIndex
+ create( in foms:
+ # getNextFomIndex
+ doMutant( in fom:
+ create( in foms:
+ findNearestMutat
+ create()
+ create( in null: <
+ create(): IMutant
+ create(): IMutant
+ create(): IMutant
+ create( in null: <
+ create( in foms:
```

```
create
getNextFomIndex
create
doMutant
findNearestMutatio
```

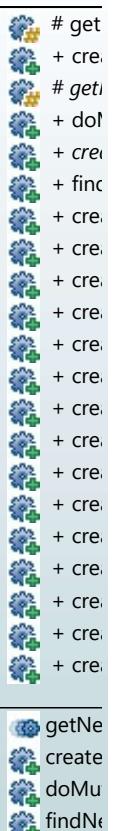


LastToFirstBStrategy

```
:oms: IMutant, in operators: IMutationOperator): IMutant
x( in foms: IMutant): int
IMutant, in operators: IMutationOperator): IMutant
< in foms: IMutant): int
ms: IMutant, in operators: IMutationOperator): IMutant
IMutant, in operators: IMutationOperator): IMutant
itionPoint( in fom: IMutant, in bytecode: byte, in mutationOperators: IMutationOperator): MutationInfo
Undefined>)
```

```
Undefined>): IMutant
<Undefined>): IMutant
IMutant): IMutant
IMutant): IMutant
IMutant): IMutant
IMutant, in null: <Undefined>): IMutant
IMutant, in operators: <Undefined>): IMutant
IMutant, in operators: IMutationOperator): IMutant
IMutant, in operators: IMutationOperator): IMutant
IMutant, in operators: IMutationOperator): IMutant
```

```
>nPoint
```



RandomMixStrategy

Random [1]

```
NextFomIndex( in foms: IMutant): int
ate( in foms: IMutant, in operators: IMutationOperator): IMutant
NextFomIndex( in foms: IMutant): int
Mutant( in foms: IMutant, in operators: IMutationOperator): IMutant
ate( in foms: IMutant, in operators: IMutationOperator): IMutant
INearestMutationPoint( in fom: IMutant, in bytecode: byte, in mutationOperators: IMutationOperator): MutationInfo
ate()
ate( in null: <Undefined>)
ate(): IMutant
ate(): IMutant
ate(): IMutant
ate( in null: <Undefined>): IMutant
ate( in foms: <Undefined>): IMutant
ate( in foms: IMutant): IMutant
ate( in foms: IMutant): IMutant
ate( in foms: IMutant): IMutant
ate( in foms: IMutant, in null: <Undefined>): IMutant
ate( in foms: IMutant, in operators: <Undefined>): IMutant
ate( in foms: IMutant, in operators: IMutationOperator): IMutant
ate( in foms: IMutant, in operators: IMutationOperator): IMutant
ate( in foms: IMutant, in operators: IMutationOperator): IMutant
```

xtFomIndex

'
tant
eariestMutationPoint

LastToFirstStrategy

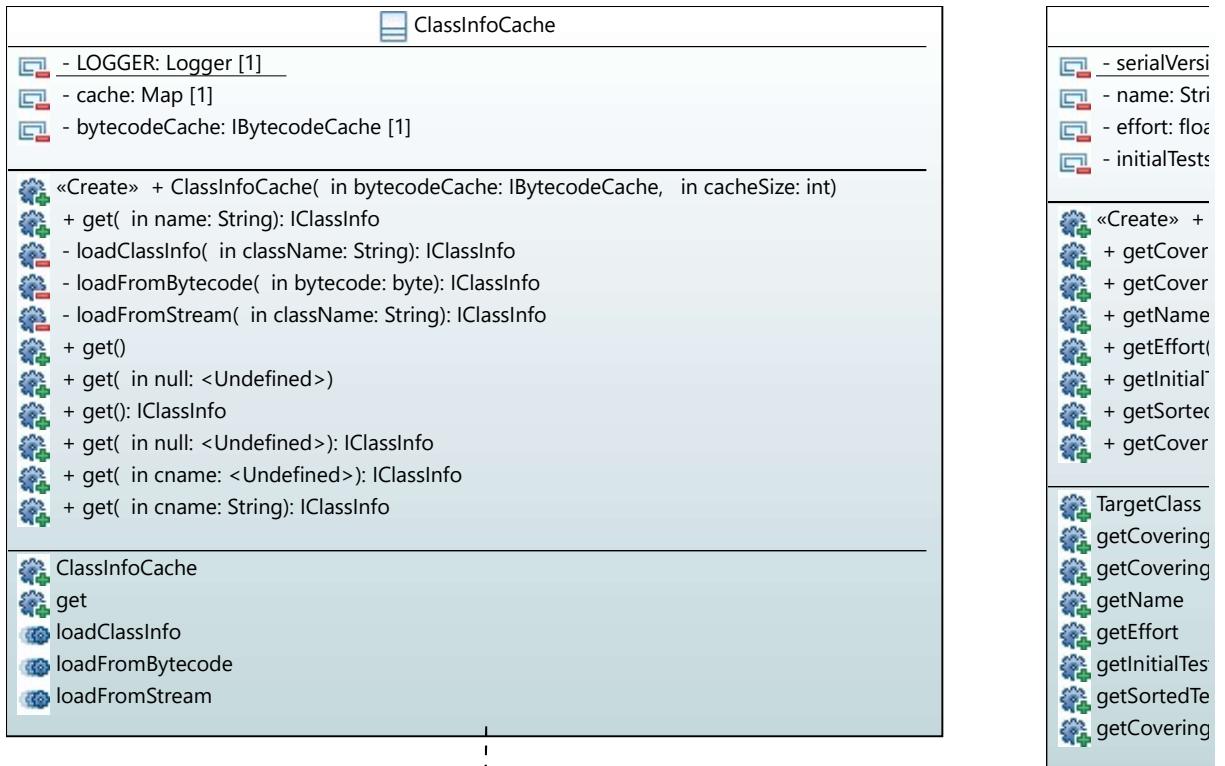
```
# getNextFomIndex( in foms: IMutant): int
+ create( in foms: IMutant, in operators: IMutationOperator): IMutant
# getNextFomIndex( in foms: IMutant): int
+ doMutant( in foms: IMutant, in operators: IMutationOperator): IMutant
+ create( in foms: IMutant, in operators: IMutationOperator): IMutant
+ findNearestMutationPoint( in form: IMutant, in bytecode: byte, in mutationOperators: IMutationOperator): MutationInfo
+ create()
+ create( in null: <Undefined>)
+ create(): IMutant
+ create(): IMutant
+ create(): IMutant
+ create( in null: <Undefined>): IMutant
+ create( in foms: <Undefined>): IMutant
+ create( in foms: IMutant): IMutant
+ create( in foms: IMutant): IMutant
+ create( in foms: IMutant): IMutant
+ create( in foms: IMutant, in null: <Undefined>): IMutant
+ create( in foms: IMutant, in operators: <Undefined>): IMutant
+ create( in foms: IMutant, in operators: IMutationOperator): IMutant
+ create( in foms: IMutant, in operators: IMutationOperator): IMutant
+ create( in foms: IMutant, in operators: IMutationOperator): IMutant
```

```
getNextFomIndex
create
doMutant
findNearestMutationPoint
```

LastToFirstAStrategy

```
+ create( in orginFoms: IMutant, in operators: IMutationOperator): IMutant
# getNextFomIndex( in foms: IMutant): int
+ create( in foms: IMutant, in operators: IMutationOperator): IMutant
# getNextFomIndex( in foms: IMutant): int
+ doMutant( in foms: IMutant, in operators: IMutationOperator): IMutant
+ create( in foms: IMutant, in operators: IMutationOperator): IMutant
+ findNearestMutationPoint( in fom: IMutant, in bytecode: byte, in mutationOperators: IMutationOperator): MutationInfo
+ create()
+ create( in null: <Undefined>)
+ create(): IMutant
+ create(): IMutant
+ create(): IMutant
+ create( in null: <Undefined>): IMutant
+ create( in foms: <Undefined>): IMutant
+ create( in foms: IMutant): IMutant
+ create( in foms: IMutant, in null: <Undefined>): IMutant
+ create( in foms: IMutant, in operators: <Undefined>): IMutant
+ create( in foms: IMutant, in operators: IMutationOperator): IMutant
+ create( in foms: IMutant, in operators: IMutationOperator): IMutant
+ create( in foms: IMutant, in operators: IMutationOperator): IMutant
```

```
create
getNextFomIndex
create
doMutant
findNearestMutationPoint
```



TargetClass

onUID: long [1]
ing [1]
at [1]
s: IInitialTestsRun [1]

TargetClass(in name: String, in effort: float, in initialTests: IInitialTestsRun)
ingTestClasses(): Collection
ingMethods(in testClass: String, in mutatedLines: List): Set
(): String
(): float
TestResults(): Collection
dTests(): List
ingTestClassesCount(): int

|TestClasses
|Methods

tResults
sts
|TestClassesCount

- access: int [1]
- className: String [1]
- signature: String [1]
- superClassClassName: String [1]
- interfaces: String [*]
- declaredMethods: IMethodInfo [*]
- declaredFields: IFieldInfo [*]
+ EMPTY_CACHE: IClassInfo [1]

«Create» + ClassInfo(in access: int, in r
+ getAccess(): int
+ getClassName(): String
+ getInterfaces(): String
+ getDeclaredFields(): IFieldInfo
+ getDeclaredMethods(): IMethodInfo
+ getSignature(): String
+ getSuperClassName(): String
+ toString(): String
+ getAccess()
+ getAccess(in null: <Undefined>)
+ getClassName()
+ getClassName(in null: <Undefined>)
+ getInterfaces()
+ getInterfaces(in null: <Undefined>)
+ getInterfaces(): String
+ getInterfaces(): String
+ getDeclaredFields()
+ getDeclaredFields(in null: <Undefined>)
+ getDeclaredFields(): IFieldInfo
+ getDeclaredFields(): IFieldInfo
+ getDeclaredFields(): IFieldInfo
+ getDeclaredMethods()
+ getDeclaredMethods(in null: <Undefined>)
+ getDeclaredMethods(): IMethodInfo
+ getDeclaredMethods(): IMethodInfo
+ getDeclaredMethods(): IMethodInfo
+ getSignature()
+ getSignature(in null: <Undefined>)
+ getSuperClassName()
+ getSuperClassName(in null: <Undefined>)
+ toString()
+ toString(in null: <Undefined>)

ClassInfo
getAccess
getClassName
getInterfaces
getDeclaredFields
getDeclaredMethods
getSignature
getSuperClassName
toString

 ClassInfo

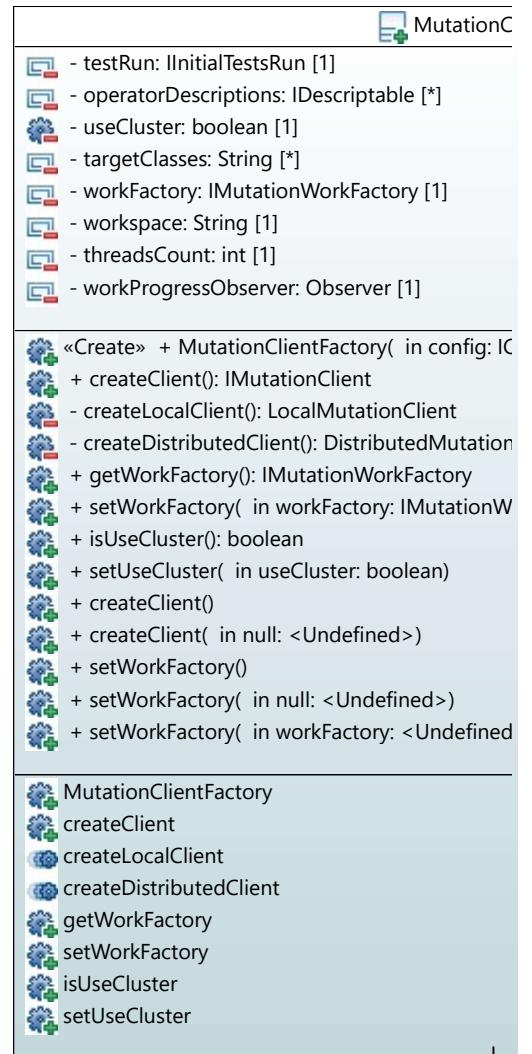
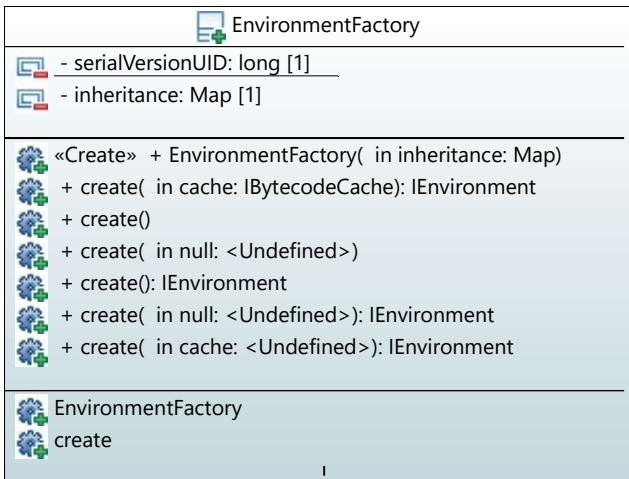
name: String, in signature: String, in superName: String, in interfaces: String, in fields: IFieldInfo, in methods: MethodInfo)

)>

ned>)

\ed>)

MethodInfo	
	- access: int [1]
	- name: String [1]
	- desc: String [1]
	- signature: String [1]
	- exceptions: String [*]
	«Create» + MethodInfo(in access: int, in name: String, in desc: String, in signature: String, in exceptions: String)
	«Create» + MethodInfo(in info: IMethodInfo)
	+ getAccess(): int
	+ getName(): String
	+ getDesc(): String
	+ getSignature(): String
	+ getExceptions(): String
	+ toString(): String
	+ getAccess()
	+ getAccess(in null: <Undefined>)
	+ getName()
	+ getName(in null: <Undefined>)
	+ getDesc()
	+ getDesc(in null: <Undefined>)
	+ getSignature()
	+ getSignature(in null: <Undefined>)
	+ getExceptions()
	+ getExceptions(in null: <Undefined>)
	+ getExceptions(): String
	+ getExceptions(): String
	+ getExceptions(): String
	+ toString()
	+ toString(in null: <Undefined>)
	MethodInfo
	MethodInfo
	getAccess
	getName
	getDesc
	getSignature
	getExceptions
	toString



```
clientFactory  
  
ClientConfig, in testRun: IInitialTestsRun)  
  
Client  
  
WorkFactory)  
  
|>)
```

```
HomQualityVerifier  
  
«Create» - HomQualityVerifier()  
+ verify( in objectives: ObjectiveCalculator, in solution: Solution): boolean  
- haveEqualSize( in objectives: ObjectiveCalculator, in solution: Solution): boolean  
  
HomQualityVerifier  
verify  
haveEqualSize
```

an

«Enumeration»
SomStrategy
LAST_TO_FIRST
LAST_TO_FIRST_A
LAST_TO_FIRST_B
LAST_TO_FIRST_C
LAST_TO_FIRST_ABC
LAST_TO_FIRST_SORTED_ABC
LAST_TO_FIRST_SORTED
DIFFERENT_OPERATORS
CLOSE_PAIR
RANDOM_MIX

CustomBinaryVariab
- maxOrder: int [1]
«Create» + CustomBinaryVariableInitialization(in problem: Problem)
initialize(in variable: Variable)
CustomBinaryVariableInitialization
initialize

leInitialization

blem, in populationSize: int, in maxOrder: int)



CustomInitializationAlgorit

- instance: AlgorithmFactory [1]

«Synchronized» + getInstance(): AlgorithmFactory
 «Synchronized» + getAlgorithm(in name: String, in properties: Properties): Algorithm
 - getInitializationField(in algorithmClass: Class): Field

getInstance
 getAlgorithm
 getInitializationField

thmFactory
roperties, in problem: Problem): Algorithm

 ShortTimeoutInfinite
 - DEFAULT_TIMEOUT: long [1]
 + DEFAULT_TIMEOUT: long [1]
 # INIT: String [1]
 # CLINIT: String [1]
 # JAVA: String [1]
 # THIS: String [1]
 + setTimeout(): long
 «Create» + InfiniteLoopGuard()
 «Create» + InfiniteLoopGuard(in timeout: long)
 + getDescription(): String
 # createCountingClassMutater(): AbstractClassMutater
 # createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int)
 # getWriterFlags(): int
 + setTimeout(): long
 + getMutationPoints(in bytecode: byte): IMutationPoint
 + mutate(in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutationPoint
 + mutate(in bytecode: byte, in mutationPoint: IMutationPoint): IMutationPoint
 # getReaderFlags(): int
 # getWriterFlags(): int
 + getName(): String
 + getDescription(): String
 + setEnvironment(in environment: IEnvironment)
 # getEnvironment(): IEnvironment
 + toString(): String
 # createCountingClassMutater(): AbstractClassMutater
 # createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int)
 setTimeout
 InfiniteLoopGuard
 InfiniteLoopGuard
 getDescription
 createCountingClassMutater
 createClassMutater
 getWriterFlags
 setTimeout
 getMutationPoints
 mutate
 mutate
 mutate
 createClassWriter
 getReaderFlags
 getWriterFlags
 getName
 getDescription
 setEnvironment
 getEnvironment
 toString
 verify
 trace
 trace

eLoopGuard

dex: int, in mutantIndex: int): AbstractClassMutater

ndex: int): IMutantBytecode
:antBytecode

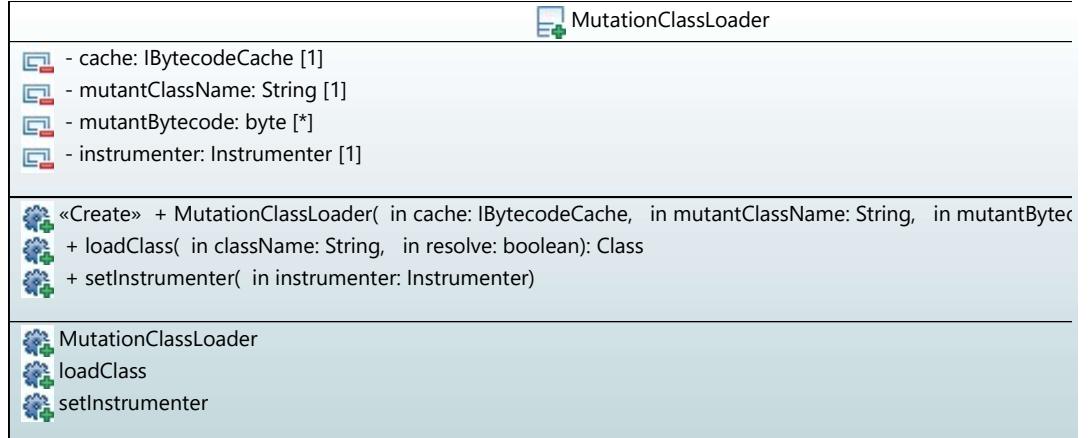
dex: int, in mutantIndex: int): AbstractClassMutater

TargetClassesSorter

 + sortTargetClasses(in config: IClientConfig, in testRun: IIni

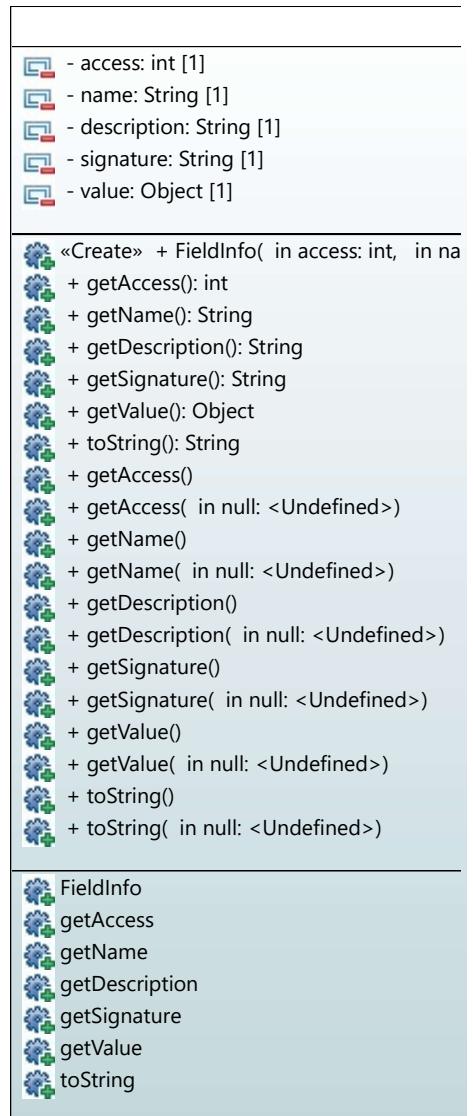
 sortTargetClasses

tialTestsRun)



```
:code: byte)
```





FieldInfo

me: String, in description: String, in signature: String, in value: Object)

- testClassName: String [1]
- cache: IBytecodeCache [1]
- coverage: ICoverage [1]
- inheritance: Map [1]
+ instrumenter: Instrumenter [1]
+ IGNORED_PREFIXES: String [*]
- LOGGER: Logger [1]

«Create» + TestClassLoader(in testClassName)
«Synchronized» # loadClass(in className)
- addLoadedClass(in className: String,
+ setInstrumenter(in instrumenter: Instrumenter
+ getInstrumenter(): Instrumenter
+ getCache(): IBytecodeCache
+ getCoverage(): ICoverage

TestClassLoader
loadClass
addLoadedClass
setInstrumenter
getInstrumenter
getCache
getCoverage

TestClassLoader

name: String, in cache: IBytecodeCache, in coverage: ICoverage, in inheritance: Map)

e: String, in resolve: boolean): Class

in loadedClass: Class)

Jmenter)

- LOGGER: Logger [1]
- cajo: CajoConnector [1]
- clients: Map [1]

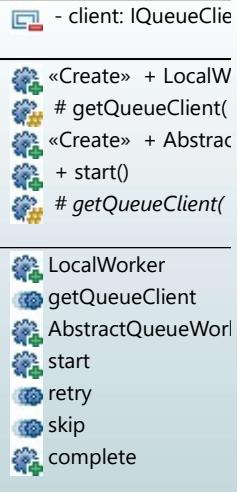
«Create» + CajoWorker
getQueueClient(in id)
«Create» + AbstractQueueWorker
+ start()
getQueueClient(in id)

CajoWorker
getQueueClient
AbstractQueueWorker
start
retry
skip
complete

CajoWorker

]

(in cajo: CajoConnector, in param: Object, in threadsCount: int, in workerQueueSize: int)
l: long): IQueueClient
ueWorker(in queue: IQueue, in param: Object, in threadsCount: int, in workerQueueSize: int)
: long): IQueueClient

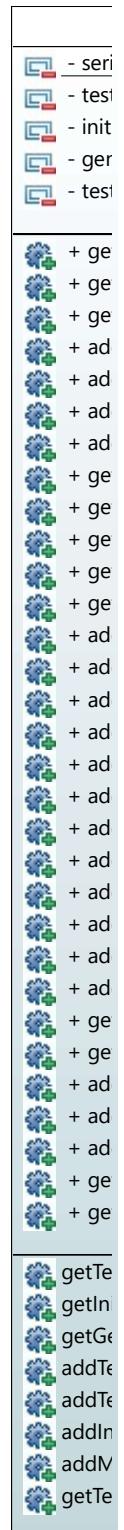
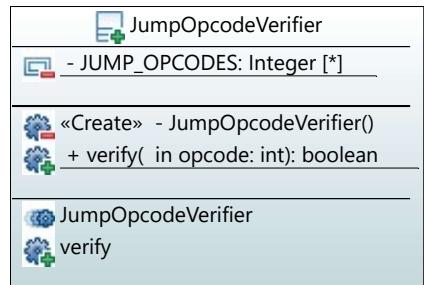
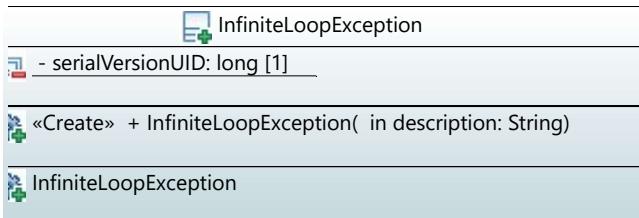


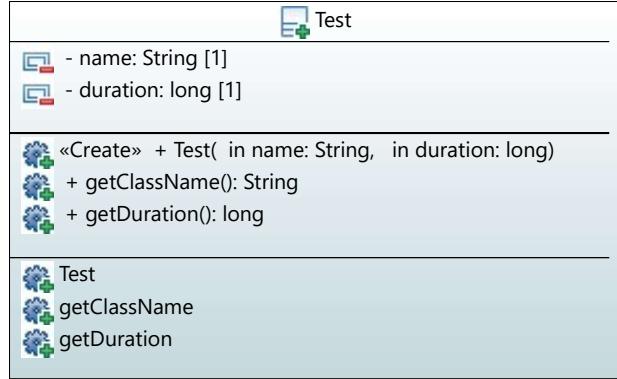
 LocalWorker

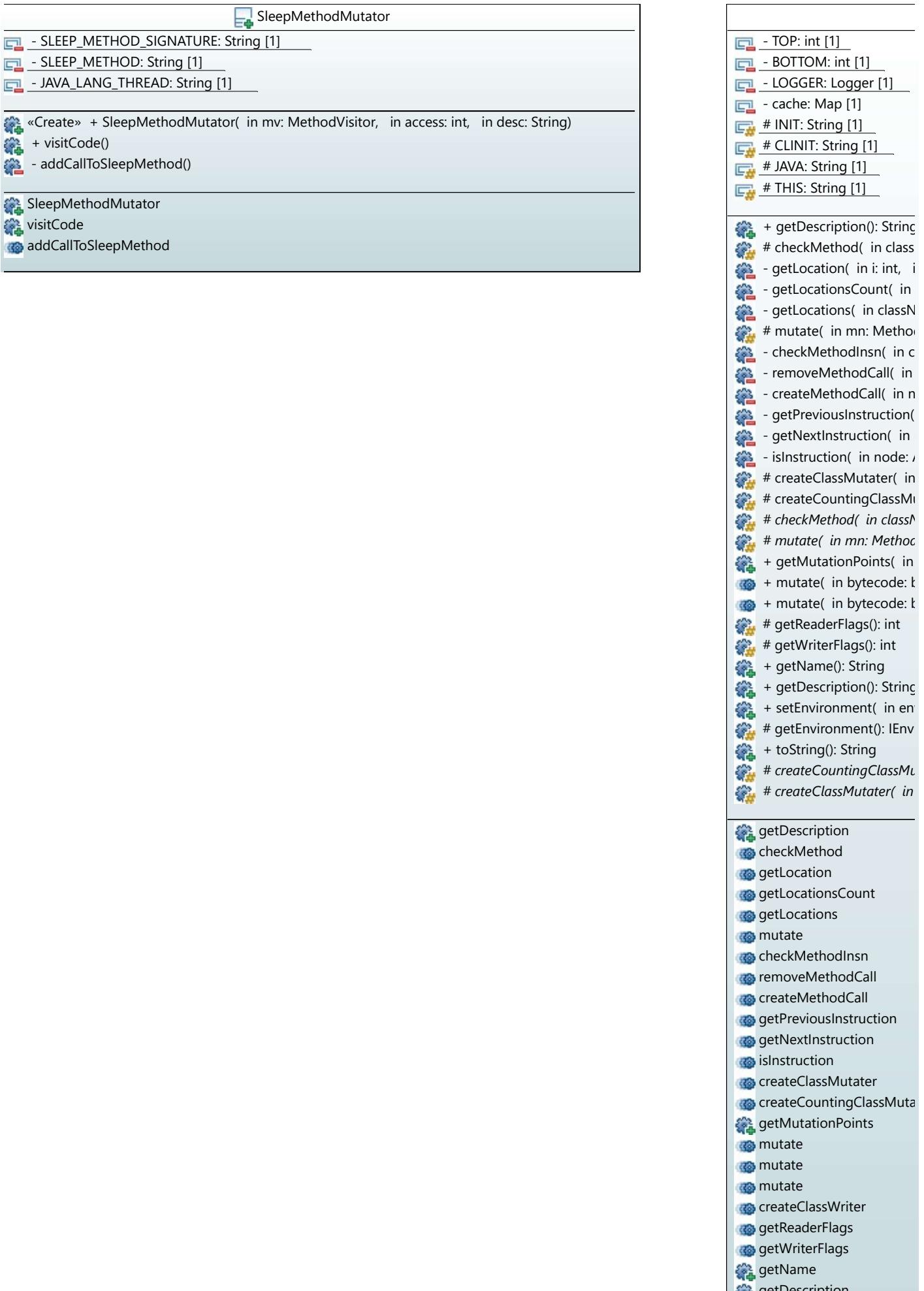
!nt [1]

`worker(in queue: IQueue, in client: IQueueClient, in param: Object, in threadsCount: int, in workerQueueSize: int)
in id: long): IQueueClient``:tQueueWorker(in queue: IQueue, in param: Object, in threadsCount: int, in workerQueueSize: int)``in id: long): IQueueClient`

ker







```
}
```

Name: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
in className: String, in mn: MethodNode, in node: MethodInsnNode, in lastReturnNode: AbstractInsnNode): int
className: String, in mn: MethodNode, in node: MethodInsnNode, in lastReturnNode: AbstractInsnNode): int
lame: String, in mn: MethodNode, in node: MethodInsnNode, in lastReturnNode: AbstractInsnNode): List
dNode, in cm: AbstractClassMutater)
lassName: String, in mn: MethodNode, in node: MethodInsnNode): boolean
mn: MethodNode, in node: MethodInsnNode)
ode: MethodInsnNode): InsnList
in node: AbstractInsnNode): AbstractInsnNode
node: AbstractInsnNode): AbstractInsnNode
AbstractInsnNode): boolean
classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
utater(): AbstractClassMutater
Name: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
INode, in cm: AbstractClassMutater)
bytecode: byte): IMutationPoint
byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
byte, in mutationPoint: IMutationPoint): IMutantBytecode

```
,
```

vironment: IEnvironment)
ironment

itater(): AbstractClassMutater
classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater

iter

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
# mutate( in mn: MethodNode, in cm: AbstractClassMutater)
- getType( in node: AbstractInsnNode, in mn: MethodNode): String
- isCloneable( in type: String): boolean
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
# createCountingClassMutater(): AbstractClassMutater
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
# mutate( in mn: MethodNode, in cm: AbstractClassMutater)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment( in environment: IEnvironment)
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
```

```
getDescription
checkMethod
mutate
getType
isCloneable
createClassMutater
createCountingClassMutater
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
toString
verify
trace
trace
```

```

- lastLineNumber: int [1]
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exce
# mutate( in method: MethodNode, in classMutater: AbstractClassMutater)
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMu
# createCountingClassMutater(): AbstractClassMutater
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in except
# mutate( in mn: MethodNode, in cm: AbstractClassMutater)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment( in environment: IEnvironment)
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMut

getDescription
checkMethod
mutate
createClassMutater
createCountingClassMutater
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
toString
verify
trace
trace

```

```

# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkMethod( in className: String, in access: int, in name: String, in desc: String)
# mutate( in mn: MethodNode, in cm: AbstractClassMutater)
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int)
# createCountingClassMutater(): AbstractClassMutater
# checkMethod( in className: String, in access: int, in name: String, in desc: String,
# mutate( in mn: MethodNode, in cm: AbstractClassMutater)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutationPoint
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment( in environment: IEnvironment)
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int)

getDescription
checkMethod
mutate
createClassMutater
createCountingClassMutater
getMutationPoints
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
toString
verify
trace
trace

```

, in signature: String, in exceptions: String): boolean

antIndex: int): AbstractClassMutater

in signature: String, in exceptions: String): boolean

ntBytecode

intIndex: int): AbstractClassMutater

INIT: String [1]
CLINIT: String [1]
JAVA: String [1]
THIS: String [1]

+ getDescription(): String
+ checkMethod(in className: String, in access: int, in na
- isDefault(in className: String, in name: String, in desc:
+ mutate(in mn: MethodNode, in cm: AbstractClassMutat
+ createClassMutater(in classWriter: ClassVisitor, in mutat
+ createCountingClassMutater(): AbstractClassMutater
+ checkMethod(in className: String, in access: int, in na
+ mutate(in mn: MethodNode, in cm: AbstractClassMutate
+ getMutationPoints(in bytecode: byte): IMutationPoint
+ mutate(in bytecode: byte, in mutationPointIndex: int, i
+ mutate(in bytecode: byte, in mutationPoint: IMutationP
getReaderFlags(): int
getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment(in environment: IEnvironment)
getEnvironment(): IEnvironment
+ toString(): String
createCountingClassMutater(): AbstractClassMutater
createClassMutater(in classWriter: ClassVisitor, in mutati

getDescription
checkMethod
isDefault
mutate
createClassMutater
createCountingClassMutater
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
toString
verify
trace
trace

```
me: String, in desc: String, in signature: String, in exceptions: String): boolean  
String): boolean  
er)
```

```
ionPointIndex: int, in mutantIndex: int): AbstractClassMutater
```

```
ne: String, in desc: String, in signature: String, in exceptions: String): boolean  
)
```

```
n mutantIndex: int): IMutantBytecode  
oint): IMutantBytecode
```

```
onPointIndex: int, in mutantIndex: int): AbstractClassMutater
```

```
- INIT_DESCRIPTION: String [1]  
- ADD_ALL_DESCRIPTION: Str  
- CLEAR_DESCRIPTION: String  
- INIT: String [1]  
- ADD_ALL_METHOD: String [1]  
- CLEAR_METHOD: String [1]  
- LIST: String [1]  
- HASH_SET: String [1]  
# INIT: String [1]  
# CLINIT: String [1]  
# JAVA: String [1]  
# THIS: String [1]
```

```
+ getDescription(): String  
# checkMethod( in className)  
+ getReturnTypeAsString( in  
+ isListDerivative( in desc: Str  
+ isListDerivative( in cl: Class)  
# mutate( in mn: MethodNod  
- createNewHashSet( in insnLis  
- clearList( in insnList:InsnLis  
- addAllElmsFromSetToList( in  
- prepareInsnList( in insnList:  
- prepareInsnListAfterMethod  
- prepareInsnBeforeVarReturn  
# createClassMutater( in clas  
# createCountingClassMutate  
# checkMethod( in className)  
# mutate( in mn: MethodNod  
+ getMutationPoints( in byte  
+ mutate( in bytecode: byte,  
+ mutate( in bytecode: byte,  
# getReaderFlags(): int  
# getWriterFlags(): int  
+ getName(): String  
+ getDescription(): String  
+ setEnvironment( in environ  
# getEnvironment(): IEnviron  
+ toString(): String  
# createCountingClassMutate  
# createClassMutater( in class
```

```
getDescription  
checkMethod  
getReturnTypeAsString  
isListDerivative  
isListDerivative  
mutate  
createNewHashSet  
clearList  
addAllElmsFromSetToList  
prepareInsnList  
prepareInsnListAfterMethodIn  
prepareInsnBeforeVarReturn  
createClassMutater  
createCountingClassMutater  
getMutationPoints  
mutate  
mutate  
mutate  
createClassWriter
```



I]
ing [1]
I [1]

I]

```
e: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean  
desc: String): String  
ing): boolean  
): boolean  
de, in cm: AbstractClassMutater)  
.list: InsnList, in listStoreIndex: int, in hashSetStoreIndex: int)  
t, in listStoreIndex: int)  
n insnList: InsnList, in listStoreIndex: int, in hashSetStoreIndex: int)  
InsnList, in listStoreIndex: int, in hashSetStoreIndex: int)  
lInvoke( in maxLocals: int): InsnList  
i( in listStoreIndex: int, in maxLocals: int): InsnList  
sWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater  
r(): AbstractClassMutater  
e: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean  
e, in cm: AbstractClassMutater)  
code: byte): IMutationPoint  
in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode  
in mutationPoint: IMutationPoint): IMutantBytecode  
  
iment: IEnvironment)  
nent  
  
r0: AbstractClassMutater  
;Writer: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
```

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NIT: String [1]

LUNIT: String [1]

AVA: String [1]

HIS: String [1]

jetDescription(): String

heckMethod(in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean

mutate(in mn: MethodNode, in cm: AbstractClassMutater)

IfStatement(in opcode: int): boolean

reateClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater

reateCountingClassMutater(): AbstractClassMutater

heckMethod(in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean

mutate(in mn: MethodNode, in cm: AbstractClassMutater)

jetMutationPoints(in bytecode: byte): IMutationPoint

mutate(in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode

mutate(in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode

etReaderFlags(): int

etWriterFlags(): int

etName(): String

etDescription(): String

etEnvironment(in environment: IEnvironment)

etEnvironment(): IEnvironment

oString(): String

reateCountingClassMutater(): AbstractClassMutater

reateClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater

Description

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MutationPoints

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iteClassWriter

ReaderFlags

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```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String)
# mutate( in mn: MethodNode, in cm: AbstractClassMutater)
- isSynchronizing( in method: MethodInsnNode): boolean
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
# createCountingClassMutater(): AbstractClassMutater
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String)
# mutate( in mn: MethodNode, in cm: AbstractClassMutater)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment( in environment: IEnvironment)
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater

getDescription
checkMethod
mutate
isSynchronizing
createClassMutater
createCountingClassMutater
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
toString
verify
trace
trace
```

	<p>ns: String): boolean</p> <p>r</p> <p>String): boolean</p>

 SCR
<pre> - closedStreams: String [*] # INIT: String [1] # CLINIT: String [1] # JAVA: String [1] # THIS: String [1] </pre>
<pre> + getDescription(): String # checkMethod(in className: String, in access: int, in name: String, in desc: String, in signa # mutate(in mn: MethodNode, in cm: AbstractClassMutater) - replaceCloseInvocation(in mn: MethodNode, in method: MethodInsnNode, in prevInsn: At - getProperMethod(in cl: Class): String - isStreamSubclass(in owner: String): boolean - isStreamSubclass(in cl: Class): boolean - isInStream(in cl: Class): boolean - isOutStream(in cl: Class): boolean # createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex # createCountingClassMutater(): AbstractClassMutater # checkMethod(in className: String, in access: int, in name: String, in desc: String, in signa # mutate(in mn: MethodNode, in cm: AbstractClassMutater) + getMutationPoints(in bytecode: byte): IMutationPoint + mutate(in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode + mutate(in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode # getReaderFlags(): int # getWriterFlags(): int + getName(): String + getDescription(): String + setEnvironment(in environment: IEnvironment) # getEnvironment(): IEnvironment + toString(): String # createCountingClassMutater(): AbstractClassMutater # createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: </pre> <hr/> <pre> getDescription checkMethod mutate replaceCloseInvocation getProperMethod isStreamSubclass isStreamSubclass isInStream isOutStream createClassMutater createCountingClassMutater getMutationPoints mutate mutate mutate createClassWriter getReaderFlags getWriterFlags getName getDescription setEnvironment getEnvironment toString verify trace trace </pre>

```
ature: String, in exceptions: String): boolean  
  
stractInsnNode)  
  
: int): AbstractClassMutater  
  
ture: String, in exceptions: String): boolean  
  
de  
  
int): AbstractClassMutater
```

```
- GET: String [1]  
- cache: Map [1]  
# INIT: String [1]  
# CLINIT: String [1]  
# JAVA: String [1]  
# THIS: String [1]  
  
+ getDescription(): String  
# checkMethodInsn( in className: String, in opcode: int, in ov  
# mutateMethodInsn( in mv: MethodVisitor, in className: Stri  
# countMethodInsnReplacements( in className: String, in opc  
# getMethodInsnReplacement( in className: String, in opcode  
- getMethodInsnReplacemnts( in opcode: int, in owner: String,  
- isReplacement( in owner: String, in name: String, in desc: Stri  
# createCountingClassMutater(): AbstractClassMutater  
# createClassMutater( in classWriter: ClassVisitor, in mutationPo  
# checkMethodInsn( in className: String, in opcode: int, in ow  
# countMethodInsnReplacements( in className: String, in opc  
# getMethodInsnReplacement( in className: String, in opcode: i  
# mutateMethodInsn( in mv: MethodVisitor, in className: String  
+ getMutationPoints( in bytecode: byte): IMutationPoint  
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mu  
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint)  
# getReaderFlags(): int  
# getWriterFlags(): int  
+ getName(): String  
+ getDescription(): String  
+ setEnvironment( in environment: IEnvironment)  
# getEnvironment(): IEnvironment  
+ toString(): String  
# createCountingClassMutater(): AbstractClassMutater  
# createClassMutater( in classWriter: ClassVisitor, in mutationPo  
  
getDescription  
checkMethodInsn  
mutateMethodInsn  
countMethodInsnReplacements  
getMethodInsnReplacement  
getMethodInsnReplacemnts  
isReplacement  
createCountingClassMutater  
createClassMutater  
getMutationPoints  
mutate  
mutate  
mutate  
createClassWriter  
getReaderFlags  
getWriterFlags  
getName  
getDescription  
setEnvironment  
getEnvironment  
toString  
verify  
trace  
trace
```



EAM

```
wner: String, in name: String, in desc: String): boolean
ng, in opcode: int, in owner: String, in name: String, in desc: String, in replacement: IMethodInfo, in itf: boolean)
ode: int, in owner: String, in name: String, in desc: String): int
:: int, in owner: String, in name: String, in desc: String, in mutantIndex: int): IMethodInfo
    in name: String, in desc: String): IMethodInfo
ing, in replacement: IMethodInfo): boolean

ointIndex: int, in mutantIndex: int): AbstractClassMutater
ner: String, in name: String, in desc: String): boolean
te: int, in owner: String, in name: String, in desc: String): int
int, in owner: String, in name: String, in desc: String, in mutantIndex: int): T
}, in opcode: int, in owner: String, in name: String, in desc: String, in replacement: T, in itf: boolean)

itantIndex: int): IMutantBytecode
: IMutantBytecode

intIndex: int, in mutantIndex: int): AbstractClassMutater
```

```

- SET: String [1]
- cache: Map [1]
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

```

```

+ getDescription(): String
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in mutantIndex: int)
# countMethodInsnReplacements( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): int
# getMethodInsnReplacement( in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in mutantIndex: int)
- getMethodInsnReplacements( in opcode: int, in owner: String, in name: String, in desc: String): IMethodInfo
- isReplacement( in owner: String, in name: String, in desc: String, in replacement: IMethodInfo): boolean
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# countMethodInsnReplacements( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): int
# getMethodInsnReplacement( in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in mutantIndex: int)
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in mutantIndex: int)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment( in environment: IEnvironment)
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater

```

```

getDescription
checkMethodInsn
mutateMethodInsn
countMethodInsnReplacements
getMethodInsnReplacement
getMethodInsnReplacements
isReplacement
createCountingClassMutater
createClassMutater
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
toString
verify
trace
trace

```

in replacement: IMethodInfo, in itf: boolean)

ex: int): IMethodInfo

· int): T
· replacement: T, in itf: boolean)

- INITIAL_CAPACITY: int [1]

- cache: Map [1]

INIT: String [1]

CLINIT: String [1]

JAVA: String [1]

THIS: String [1]

+ getDescription(): String

checkMethodInsn(in className: String, in opcode: int, in

mutateMethodInsn(in mv: MethodVisitor, in className: St

countMethodInsnReplacements(in className: String, in op

getMethodInsnReplacement(in className: String, in opco

- prepareStack(in mv: MethodVisitor, in args: Type, in newO

- getMethodInsnReplacements(in opcode: int, in owner: Stri

- isReplacement(in owner: String, in name: String, in desc: S

createCountingClassMutater(): AbstractClassMutater

createClassMutater(in classWriter: ClassVisitor, in mutation

checkMethodInsn(in className: String, in opcode: int, in o

countMethodInsnReplacements(in className: String, in op

getMethodInsnReplacement(in className: String, in opcode

mutateMethodInsn(in mv: MethodVisitor, in className: Stri

+ getMutationPoints(in bytecode: byte): IMutationPoint

+ mutate(in bytecode: byte, in mutationPointIndex: int, in n

+ mutate(in bytecode: byte, in mutationPoint: IMutationPoin

getReaderFlags(): int

getWriterFlags(): int

+ getName(): String

+ getDescription(): String

+ setEnvironment(in environment: IEnvironment)

getEnvironment(): IEnvironment

+ toString(): String

createCountingClassMutater(): AbstractClassMutater

createClassMutater(in classWriter: ClassVisitor, in mutation)

getDescription

checkMethodInsn

mutateMethodInsn

countMethodInsnReplacements

getMethodInsnReplacement

prepareStack

getMethodInsnReplacements

isReplacement

createCountingClassMutater

createClassMutater

getMutationPoints

mutate

mutate

createClassWriter

getReaderFlags

getWriterFlags

getName

getDescription

setEnvironment

getEnvironment

toString

verify

trace

trace

```
owner: String, in name: String, in desc: String): boolean
ring, in opcode: int, in owner: String, in name: String, in desc: String, in newOrder: int, in itf: boolean)
ode: int, in owner: String, in name: String, in desc: String): int
de: int, in owner: String, in name: String, in desc: String, in mutantIndex: int): int
rder: int)
}, in name: String, in desc: String): Integer
tring, in method: IMethoInfo): boolean

PointIndex: int, in mutantIndex: int): AbstractClassMutater
wner: String, in name: String, in desc: String): boolean
ode: int, in owner: String, in name: String, in desc: String): int
: int, in owner: String, in name: String, in desc: String, in mutantIndex: int): T
ng, in opcode: int, in owner: String, in name: String, in desc: String, in replacement: T, in itf: boolean)

nutantIndex: int): IMutantBytecode
it): IMutantBytecode

PointIndex: int, in mutantIndex: int): AbstractClassMutater
```

```

# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkInsn( in className: String, in opcode: int): boolean
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
# checkAnnotationDefault( in className: String): boolean
# checkAnnotation( in className: String, in desc: String, in visible: boolean): boolean
# checkParameterAnnotation( in className: String, in parameter: int, in desc: String, in visible: boolean): boolean
# checkAttribute( in className: String, in attr: Attribute): boolean
# checkCode( in className: String): boolean
# checkInsn( in className: String, in opcode: int): boolean
# checkIntInsn( in className: String, in opcode: int, in operand: int): boolean
# checkVarInsn( in className: String, in opcode: int, in var: int): boolean
# checkTypeInsn( in className: String, in opcode: int, in type: String): boolean
# checkFieldInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
# checkLabel( in className: String, in label: Label): boolean
# checkLdcInsn( in className: String, in cst: Object): boolean
# checkInclInsn( in className: String, in var: int, in increment: int): boolean
# checkTableSwitchInsn( in className: String, in min: int, in max: int, in dflt: Label, in labels: Label): boolean
# checkLookupSwitchInsn( in className: String, in dflt: Label, in keys: int, in labels: Label): boolean
# checkMultiANewArrayInsn( in className: String, in desc: String, in dims: int): boolean
# checkTryCatchBlock( in className: String, in start: Label, in end: Label, in handler: Label, in type: String): boolean
# checkLocalVariable( in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int): boolean
# checkEnd( in className: String): boolean
# mutateAnnotationDefault( in mv: MethodVisitor, in className: String): AnnotationVisitor
# mutateAnnotation( in mv: MethodVisitor, in className: String, in desc: String, in visible: boolean): AnnotationVisitor
# mutateParameterAnnotation( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
# mutateAttribute( in mv: MethodVisitor, in className: String, in attr: Attribute)
# mutateCode( in mv: MethodVisitor, in className: String)
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# mutateIntInsn( in mv: MethodVisitor, in className: String, in opcode: int, in operand: int)
# mutateVarInsn( in mv: MethodVisitor, in className: String, in opcode: int, in var: int)
# mutateTypeInsn( in mv: MethodVisitor, in className: String, in opcode: int, in type: String)
# mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label)
# mutateLabel( in mv: MethodVisitor, in className: String, in label: Label)
# mutateLdcInsn( in mv: MethodVisitor, in className: String, in cst: Object)
# mutateInclInsn( in mv: MethodVisitor, in className: String, in var: int, in increment: int)
# mutateTableSwitchInsn( in mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label)
# mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)
# mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
# mutateTryCatchBlock( in mv: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label, in type: String)
# mutateLocalVariable( in mv: MethodVisitor, in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int)
# mutateEnd( in mv: MethodVisitor, in className: String)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ rootEnvironment( in environments: IEnvironment)
```

```

# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkInsn( in className: String, in opcode: int): boolean
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int)
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String)
# checkAnnotationDefault( in className: String): boolean
# checkAnnotation( in className: String, in desc: String, in visible: boolean): boolean
# checkParameterAnnotation( in className: String, in parameter: int, in desc: String, in signature: String)
# checkAttribute( in className: String, in attr: Attribute): boolean
# checkCode( in className: String): boolean
# checkInsn( in className: String, in opcode: int): boolean
# checkIntInsn( in className: String, in opcode: int, in operand: int): boolean
# checkVarInsn( in className: String, in opcode: int, in var: int): boolean
# checkTypeInsn( in className: String, in opcode: int, in type: String): boolean
# checkFieldInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in signature: String)
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in signature: String)
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
# checkLabel( in className: String, in label: Label): boolean
# checkLdcInsn( in className: String, in cst: Object): boolean
# checkInclInsn( in className: String, in var: int, in increment: int): boolean
# checkTableSwitchInsn( in className: String, in min: int, in max: int, in dflt: Label, in labels: Label[])
# checkLookupSwitchInsn( in className: String, in dflt: Label, in keys: int, in labels: Label[])
# checkMultiANewArrayInsn( in className: String, in desc: String, in dims: int): boolean
# checkTryCatchBlock( in className: String, in start: Label, in end: Label, in handler: Label)
# checkLocalVariable( in className: String, in name: String, in desc: String, in signature: String)
# checkEnd( in className: String): boolean
# mutateAnnotationDefault( in mv: MethodVisitor, in className: String): AnnotationVisit
# mutateAnnotation( in mv: MethodVisitor, in className: String, in desc: String, in visibility: int)
# mutateParameterAnnotation( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in signature: String)
# mutateAttribute( in mv: MethodVisitor, in className: String, in attr: Attribute)
# mutateCode( in mv: MethodVisitor, in className: String)
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# mutateIntInsn( in mv: MethodVisitor, in className: String, in opcode: int, in operand: int)
# mutateVarInsn( in mv: MethodVisitor, in className: String, in opcode: int, in var: int)
# mutateTypeInsn( in mv: MethodVisitor, in className: String, in opcode: int, in type: String)
# mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in signature: String)
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in signature: String)
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label)
# mutateLabel( in mv: MethodVisitor, in className: String, in label: Label)
# mutateLdcInsn( in mv: MethodVisitor, in className: String, in cst: Object)
# mutateInclInsn( in mv: MethodVisitor, in className: String, in var: int, in increment: int)
# mutateTableSwitchInsn( in mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label[])
# mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label[])
# mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
# mutateTryCatchBlock( in mv: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label)
# mutateLocalVariable( in mv: MethodVisitor, in className: String, in name: String, in desc: String, in signature: String)
# mutateEnd( in mv: MethodVisitor, in className: String)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ getEnvironment( in environment: IEnvironment)
```

uftOperand

```
ndex: int): AbstractClassMutater
signature: String, in exceptions: String): boolean

visible: boolean): boolean

in desc: String): boolean
ing, in desc: String): boolean

abels: Label): boolean
el): boolean

bel, in type: String): boolean
:: String, in start: Label, in end: Label, in index: int): boolean

or
ole: boolean): AnnotationVisitor
r: int, in desc: String, in visible: boolean): AnnotationVisitor

l: int)

String)
: String, in name: String, in desc: String)
ner: String, in name: String, in desc: String, in itf: boolean)
Label)

nt)
x: int, in dflt: Label, in labels: Label)
n keys: int, in labels: Label)
g, in dims: int)
nd: Label, in handler: Label, in type: String)
desc: String, in signature: String, in start: Label, in end: Label, in index: int)

ecode
```

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkInsn( in className: String)
# mutateInsn( in mv: Method)
# createCountingClassMutater()
# createClassMutater( in className)
# checkMethod( in className)
# checkAnnotationDefault( in className)
# checkAnnotation( in className)
# checkParameterAnnotation( in className)
# checkAttribute( in className)
# checkCode( in className)
# checkInsn( in className)
# checkIntInsn( in className)
# checkVarInsn( in className)
# checkTypeInsn( in className)
# checkFieldInsn( in className)
# checkMethodInsn( in className)
# checkJumpInsn( in className)
# checkLabel( in className)
# checkLdcInsn( in className)
# checkInclInsn( in className)
# checkTableSwitchInsn( in className)
# checkLookupSwitchInsn( in className)
# checkMultiANewArrayInsn( in className)
# checkTryCatchBlock( in className)
# checkLocalVariable( in className)
# checkEnd( in className)
# mutateAnnotationDefault( in mv)
# mutateAnnotation( in mv)
# mutateParameterAnnotation( in mv)
# mutateAttribute( in mv)
# mutateCode( in mv)
# mutateInsn( in mv)
# mutateIntInsn( in mv)
# mutateVarInsn( in mv)
# mutateTypeInsn( in mv)
# mutateFieldInsn( in mv)
# mutateMethodInsn( in mv)
# mutateJumpInsn( in mv)
# mutateLabel( in mv)
# mutateLdcInsn( in mv)
# mutateInclInsn( in mv)
# mutateTableSwitchInsn( in mv)
# mutateLookupSwitchInsn( in mv)
# mutateMultiANewArrayInsn( in mv)
# mutateTryCatchBlock( in mv)
# mutateLocalVariable( in mv)
# mutateEnd( in mv)
+ getMutationPoints( in bytecode)
+ mutate( in bytecode)
+ mutate( in bytecode)
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment( in environment)
```

```
ring, in opcode: int): boolean
visitor, in className: String, in opcode: int)
(): AbstractClassMutater
Writer: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
className: String): boolean
ame: String, in desc: String, in visible: boolean): boolean
in className: String, in parameter: int, in desc: String, in visible: boolean): boolean
e: String, in attr: Attribute): boolean
tring): boolean
ring, in opcode: int): boolean
String, in opcode: int, in operand: int): boolean
: String, in opcode: int, in var: int): boolean
e: String, in opcode: int, in type: String): boolean
e: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
lame: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
ne: String, in opcode: int, in label: Label): boolean
tring, in label: Label): boolean
: String, in cst: Object): boolean
: String, in var: int, in increment: int): boolean
issName: String, in min: int, in max: int, in dflt: Label, in labels: Label): boolean
className: String, in dflt: Label, in keys: int, in labels: Label): boolean
in className: String, in desc: String, in dims: int): boolean
:Name: String, in start: Label, in end: Label, in handler: Label, in type: String): boolean
Name: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int): boolean
ing): boolean
n mv: MethodVisitor, in className: String): AnnotationVisitor
MethodVisitor, in className: String, in desc: String, in visible: boolean): AnnotationVisitor
if (in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
thodVisitor, in className: String, in attr: Attribute)
IVisitor, in className: String)
Visitor, in className: String, in opcode: int)
odVisitor, in className: String, in opcode: int, in operand: int)
odVisitor, in className: String, in opcode: int, in var: int)
hodVisitor, in className: String, in opcode: int, in type: String)
hodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in ift: boolean)
thodVisitor, in className: String, in opcode: int, in label: Label)
IVisitor, in className: String, in label: Label)
odVisitor, in className: String, in cst: Object)
odVisitor, in className: String, in var: int, in increment: int)
nv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label)
n mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)
in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label, in type: String)
MethodVisitor, in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int)
visitor, in className: String)
ode: byte): IMutationPoint
in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
in mutationPoint: IMutationPoint): IMutantBytecode
```

```

# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkInsn( in className: String, in opcode: int): boolean
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutat
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptio
# checkAnnotationDefault( in className: String): boolean
# checkAnnotation( in className: String, in desc: String, in visible: boolean): boolean
# checkParameterAnnotation( in className: String, in parameter: int, in desc: String, in visible: boolean): boolean
# checkAttribute( in className: String, in attr: Attribute): boolean
# checkCode( in className: String): boolean
# checkInsn( in className: String, in opcode: int): boolean
# checkIntInsn( in className: String, in opcode: int, in operand: int): boolean
# checkVarInsn( in className: String, in opcode: int, in var: int): boolean
# checkTypeInsn( in className: String, in opcode: int, in type: String): boolean
# checkFieldInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
# checkLabel( in className: String, in label: Label): boolean
# checkLdcInsn( in className: String, in cst: Object): boolean
# checkLineInsn( in className: String, in var: int, in increment: int): boolean
# checkTableSwitchInsn( in className: String, in min: int, in max: int, in dflt: Label, in labels: Label): boolean
# checkLookupSwitchInsn( in className: String, in dflt: Label, in keys: int, in labels: Label): boolean
# checkMultiANewArrayInsn( in className: String, in desc: String, in dims: int): boolean
# checkTryCatchBlock( in className: String, in start: Label, in end: Label, in handler: Label, in type: String): boolean
# checkLocalVariable( in className: String, in name: String, in desc: String, in signature: String, in start: Label, in
# checkEnd( in className: String): boolean
# mutateAnnotationDefault( in mv: MethodVisitor, in className: String): AnnotationVisitor
# mutateAnnotation( in mv: MethodVisitor, in className: String, in desc: String, in visible: boolean): AnnotationVis
# mutateParameterAnnotation( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in visibl
# mutateAttribute( in mv: MethodVisitor, in className: String, in attr: Attribute)
# mutateCode( in mv: MethodVisitor, in className: String)
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# mutateIntInsn( in mv: MethodVisitor, in className: String, in opcode: int, in operand: int)
# mutateVarInsn( in mv: MethodVisitor, in className: String, in opcode: int, in var: int)
# mutateTypeInsn( in mv: MethodVisitor, in className: String, in opcode: int, in type: String)
# mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String)
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label)
# mutateLabel( in mv: MethodVisitor, in className: String, in label: Label)
# mutateLdcInsn( in mv: MethodVisitor, in className: String, in cst: Object)
# mutateLineInsn( in mv: MethodVisitor, in className: String, in var: int, in increment: int)
# mutateTableSwitchInsn( in mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in lab
# mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)
# mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
# mutateTryCatchBlock( in mv: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label,
# mutateLocalVariable( in mv: MethodVisitor, in className: String, in name: String, in desc: String, in signature: St
# mutateEnd( in mv: MethodVisitor, in className: String)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment( in environment: IEnvironment)

```

```
    tions: String): boolean
```

```
n
```

```
    end: Label, in index: int): boolean
```

```
    itor
sible: boolean): AnnotationVisitor
```

```
    , in desc: String)
, in desc: String, in itf: boolean)
```

```
els: Label)
```

```
    in type: String)
ring, in start: Label, in end: Label, in index: int)
```

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]
```

```
+ getDescription(): String
# checkInsn( in className: String, in opcode: int): boolean
# mutateInsn( in mv: MethodVisitor, in className: String)
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutator: ClassMutater)
# checkMethod( in className: String, in access: int, in name: String)
# checkAnnotationDefault( in className: String): boolean
# checkAnnotation( in className: String, in desc: String)
# checkParameterAnnotation( in className: String, in parameterName: String)
# checkAttribute( in className: String, in attr: Attribute)
# checkCode( in className: String): boolean
# checkInsn( in className: String, in opcode: int): boolean
# checkIntInsn( in className: String, in opcode: int, in value: int)
# checkVarInsn( in className: String, in opcode: int, in var: int)
# checkTypeInsn( in className: String, in opcode: int, in desc: String)
# checkFieldInsn( in className: String, in opcode: int, in name: String)
# checkMethodInsn( in className: String, in opcode: int, in name: String)
# checkJumpInsn( in className: String, in opcode: int, in label: Label)
# checkLabel( in className: String, in label: Label): boolean
# checkLdcInsn( in className: String, in cst: Object): boolean
# checkInclInsn( in className: String, in var: int, in increase: boolean)
# checkTableSwitchInsn( in className: String, in min: int, in max: int, in labels: Label[])
# checkLookupSwitchInsn( in className: String, in dflt: Label, in labels: Label[])
# checkMultiANewArrayInsn( in className: String, in desc: String)
# checkTryCatchBlock( in className: String, in start: Label, in end: Label)
# checkLocalVariable( in className: String, in name: String)
# checkEnd( in className: String): boolean
# mutateAnnotationDefault( in mv: MethodVisitor, in className: String)
# mutateAnnotation( in mv: MethodVisitor, in className: String)
# mutateParameterAnnotation( in mv: MethodVisitor, in parameterName: String)
# mutateAttribute( in mv: MethodVisitor, in className: String)
# mutateCode( in mv: MethodVisitor, in className: String)
# mutateInsn( in mv: MethodVisitor, in className: String)
# mutateIntInsn( in mv: MethodVisitor, in className: String)
# mutateVarInsn( in mv: MethodVisitor, in className: String)
# mutateTypeInsn( in mv: MethodVisitor, in className: String)
# mutateFieldInsn( in mv: MethodVisitor, in className: String)
# mutateMethodInsn( in mv: MethodVisitor, in className: String)
# mutateJumpInsn( in mv: MethodVisitor, in className: String)
# mutateLabel( in mv: MethodVisitor, in className: String)
# mutateLdcInsn( in mv: MethodVisitor, in className: String)
# mutateInclInsn( in mv: MethodVisitor, in className: String)
# mutateTableSwitchInsn( in mv: MethodVisitor, in className: String)
# mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String)
# mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String)
# mutateTryCatchBlock( in mv: MethodVisitor, in className: String)
# mutateLocalVariable( in mv: MethodVisitor, in className: String)
# mutateEnd( in mv: MethodVisitor, in className: String)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutationValue: byte)
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint, in mutationValue: byte)
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ getEnvironment( in environment: IEnvironment)
```

```
on
}, in opcode: int)

ationPointIndex: int, in mutantIndex: int): AbstractClassMutater
name: String, in desc: String, in signature: String, in exceptions: String): boolean

in visible: boolean): boolean
parameter: int, in desc: String, in visible: boolean): boolean
boolean

on
operand: int): boolean
var: int): boolean
type: String): boolean
owner: String, in name: String, in desc: String): boolean
, in owner: String, in name: String, in desc: String): boolean
in label: Label): boolean
ean
lean
ement: int): boolean
, in max: int, in dflt: Label, in labels: Label): boolean
abel, in keys: int, in labels: Label): boolean
sc: String, in dims: int): boolean
el, in end: Label, in handler: Label, in type: String): boolean
ng, in desc: String, in signature: String, in start: Label, in end: Label, in index: int): boolean

ssName: String): AnnotationVisitor
e: String, in desc: String, in visible: boolean): AnnotationVisitor
className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
String, in attr: Attribute)
ig)
}, in opcode: int)
ing, in opcode: int, in operand: int)
ring, in opcode: int, in var: int)
String, in opcode: int, in type: String)
String, in opcode: int, in owner: String, in name: String, in desc: String)
ie: String, in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)
String, in opcode: int, in label: Label)
ig, in label: Label)
ring, in cst: Object)
ring, in var: int, in increment: int)
Name: String, in min: int, in max: int, in dflt: Label, in labels: Label)
ssName: String, in dflt: Label, in keys: int, in labels: Label)
className: String, in desc: String, in dims: int)
me: String, in start: Label, in end: Label, in handler: Label, in type: String)
ne: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int)
()

in mutantIndex: int): IMutantBytecode
point): IMutantBytecode
```

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkInsn( in className: String, in opcode: int): boolean
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
# checkAnnotationDefault( in className: String): boolean
# checkAnnotation( in className: String, in desc: String, in visible: boolean): boolean
# checkParameterAnnotation( in className: String, in parameter: int, in desc: String, in visible: boolean): boolean
# checkAttribute( in className: String, in attr: Attribute): boolean
# checkCode( in className: String): boolean
# checkInsn( in className: String, in opcode: int): boolean
# checkIntInsn( in className: String, in opcode: int, in operand: int): boolean
# checkVarInsn( in className: String, in opcode: int, in var: int): boolean
# checkTypeInsn( in className: String, in opcode: int, in type: String): boolean
# checkFieldInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
# checkLabel( in className: String, in label: Label): boolean
# checkLdcInsn( in className: String, in cst: Object): boolean
# checkInclInsn( in className: String, in var: int, in increment: int): boolean
# checkTableSwitchInsn( in className: String, in min: int, in max: int, in dflt: Label, in labels: Label): boolean
# checkLookupSwitchInsn( in className: String, in dflt: Label, in keys: int, in labels: Label): boolean
# checkMultiANewArrayInsn( in className: String, in desc: String, in dims: int): boolean
# checkTryCatchBlock( in className: String, in start: Label, in end: Label, in handler: Label, in type: String): boolean
# checkLocalVariable( in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int): boolean
# checkEnd( in className: String): boolean
# mutateAnnotationDefault( in mv: MethodVisitor, in className: String): AnnotationVisitor
# mutateAnnotation( in mv: MethodVisitor, in className: String, in desc: String, in visible: boolean): AnnotationVisitor
# mutateParameterAnnotation( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
# mutateAttribute( in mv: MethodVisitor, in className: String, in attr: Attribute)
# mutateCode( in mv: MethodVisitor, in className: String)
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# mutateIntInsn( in mv: MethodVisitor, in className: String, in opcode: int, in operand: int)
# mutateVarInsn( in mv: MethodVisitor, in className: String, in opcode: int, in var: int)
# mutateTypeInsn( in mv: MethodVisitor, in className: String, in opcode: int, in type: String)
# mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in ift: boolean)
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label)
# mutateLabel( in mv: MethodVisitor, in className: String, in label: Label)
# mutateLdcInsn( in mv: MethodVisitor, in className: String, in cst: Object)
# mutateInclInsn( in mv: MethodVisitor, in className: String, in var: int, in increment: int)
# mutateTableSwitchInsn( in mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label)
# mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)
# mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
# mutateTryCatchBlock( in mv: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label, in type: String)
# mutateLocalVariable( in mv: MethodVisitor, in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label)
# mutateEnd( in mv: MethodVisitor, in className: String)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ getEnvironment( in environment: IEnvironment)
```

boolean

visitor

olean)

: Label, in index: int)

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkInsn( in className: String, in opcode: int): boolean
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int)
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String)
# checkAnnotationDefault( in className: String): boolean
# checkAnnotation( in className: String, in desc: String, in visible: boolean): boolean
# checkParameterAnnotation( in className: String, in parameter: int, in desc: String, in signature: String)
# checkAttribute( in className: String, in attr: Attribute): boolean
# checkCode( in className: String): boolean
# checkInsn( in className: String, in opcode: int): boolean
# checkIntInsn( in className: String, in opcode: int, in operand: int): boolean
# checkVarInsn( in className: String, in opcode: int, in var: int): boolean
# checkTypeInsn( in className: String, in opcode: int, in type: String): boolean
# checkFieldInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
# checkLabel( in className: String, in label: Label): boolean
# checkLdcInsn( in className: String, in cst: Object): boolean
# checkIncInsn( in className: String, in var: int, in increment: int): boolean
# checkTableSwitchInsn( in className: String, in min: int, in max: int, in dflt: Label, in labels: Label[])
# checkLookupSwitchInsn( in className: String, in dflt: Label, in keys: int, in labels: Label[])
# checkMultiANewArrayInsn( in className: String, in desc: String, in dims: int): boolean
# checkTryCatchBlock( in className: String, in start: Label, in end: Label, in handler: Label)
# checkLocalVariable( in className: String, in name: String, in desc: String, in signature: String)
# checkEnd( in className: String): boolean
# mutateAnnotationDefault( in mv: MethodVisitor, in className: String): AnnotationVisit
# mutateAnnotation( in mv: MethodVisitor, in className: String, in desc: String, in visible: boolean)
# mutateParameterAnnotation( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String)
# mutateAttribute( in mv: MethodVisitor, in className: String, in attr: Attribute)
# mutateCode( in mv: MethodVisitor, in className: String)
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# mutateIntInsn( in mv: MethodVisitor, in className: String, in opcode: int, in operand: int)
# mutateVarInsn( in mv: MethodVisitor, in className: String, in opcode: int, in var: int)
# mutateTypeInsn( in mv: MethodVisitor, in className: String, in opcode: int, in type: String)
# mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label)
# mutateLabel( in mv: MethodVisitor, in className: String, in label: Label)
# mutateLdcInsn( in mv: MethodVisitor, in className: String, in cst: Object)
# mutateIncInsn( in mv: MethodVisitor, in className: String, in var: int, in increment: int)
# mutateTableSwitchInsn( in mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label[])
# mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label[])
# mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
# mutateTryCatchBlock( in mv: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label)
# mutateLocalVariable( in mv: MethodVisitor, in className: String, in name: String, in desc: String)
# mutateEnd( in mv: MethodVisitor, in className: String)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ getEnvironment(): Environment (Environment)
```

CIR_01

```
ndex: int): AbstractClassMutater
| signature: String, in exceptions: String): boolean

| visible: boolean): boolean

, in desc: String): boolean
ing, in desc: String): boolean

labels: Label): boolean
|el): boolean

bel, in type: String): boolean
|: String, in start: Label, in end: Label, in index: int): boolean

|or
ble: boolean): AnnotationVisitor
|r: int, in desc: String, in visible: boolean): AnnotationVisitor

|i: int)

String)
|: String, in name: String, in desc: String)
|ner: String, in name: String, in desc: String, in itf: boolean)
|Label)

nt)
|ix: int, in dflt: Label, in labels: Label)
|n keys: int, in labels: Label)
|g, in dims: int)
|nd: Label, in handler: Label, in type: String)
|desc: String, in signature: String, in start: Label, in end: Label, in index: int)

tecode
```

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkInsn( in className: String)
# mutateInsn( in mv: Method)
# createCountingClassMutater()
# createClassMutater( in className)
# checkMethod( in className)
# checkAnnotationDefault( in className)
# checkAnnotation( in className)
# checkParameterAnnotation( in className)
# checkAttribute( in className)
# checkCode( in className)
# checkInsn( in className)
# checkIntInsn( in className)
# checkVarInsn( in className)
# checkTypeInsn( in className)
# checkFieldInsn( in className)
# checkMethodInsn( in className)
# checkJumpInsn( in className)
# checkLabel( in className)
# checkLdcInsn( in className)
# checkInclInsn( in className)
# checkTableSwitchInsn( in r)
# checkLookupSwitchInsn( in r)
# checkMultiANewArrayInsn( in r)
# checkTryCatchBlock( in r)
# checkLocalVariable( in r)
# checkEnd( in className: String)
# mutateAnnotationDefault( in mv: Method)
# mutateAnnotation( in mv: Method)
# mutateParameterAnnotation( in mv: Method)
# mutateAttribute( in mv: Method)
# mutateCode( in mv: Method)
# mutateInsn( in mv: Method)
# mutateIntInsn( in mv: Method)
# mutateVarInsn( in mv: Method)
# mutateTypeInsn( in mv: Method)
# mutateFieldInsn( in mv: Method)
# mutateMethodInsn( in mv: Method)
# mutateJumpInsn( in mv: Method)
# mutateLabel( in mv: Method)
# mutateLdcInsn( in mv: Method)
# mutateInclInsn( in mv: Method)
# mutateTableSwitchInsn( in r)
# mutateLookupSwitchInsn( in r)
# mutateMultiANewArrayInsn( in r)
# mutateTryCatchBlock( in mv: Method)
# mutateLocalVariable( in mv: Method)
# mutateEnd( in mv: Method)
+ getMutationPoints( in bytecode)
+ mutate( in bytecode: byte)
+ mutate( in bytecode: byte)
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment( in environment)
```

```
ring, in opcode: int): boolean
Visitor, in className: String, in opcode: int)
(): AbstractClassMutater
Writer: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
className: String): boolean
ame: String, in desc: String, in visible: boolean): boolean
in className: String, in parameter: int, in desc: String, in visible: boolean): boolean
e: String, in attr: Attribute): boolean
tring): boolean
ring, in opcode: int): boolean
String, in opcode: int, in operand: int): boolean
: String, in opcode: int, in var: int): boolean
e: String, in opcode: int, in type: String): boolean
e: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
lame: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
ne: String, in opcode: int, in label: Label): boolean
tring, in label: Label): boolean
: String, in cst: Object): boolean
: String, in var: int, in increment: int): boolean
ssName: String, in min: int, in max: int, in dflt: Label, in labels: Label): boolean
className: String, in dflt: Label, in keys: int, in labels: Label): boolean
in className: String, in desc: String, in dims: int): boolean
sName: String, in start: Label, in end: Label, in handler: Label, in type: String): boolean
Name: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int): boolean
ing): boolean
n mv: MethodVisitor, in className: String): AnnotationVisitor
MethodVisitor, in className: String, in desc: String, in visible: boolean): AnnotationVisitor
( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
thodVisitor, in className: String, in attr: Attribute)
dVisitor, in className: String)
Visitor, in className: String, in opcode: int)
odVisitor, in className: String, in opcode: int, in operand: int)
iodVisitor, in className: String, in opcode: int, in var: int)
thodVisitor, in className: String, in opcode: int, in type: String)
thodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)
ethodVisitor, in className: String, in opcode: int, in label: Label)
dVisitor, in className: String, in label: Label)
nodVisitor, in className: String, in cst: Object)
nodVisitor, in className: String, in var: int, in increment: int)
nv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label)
n mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)
( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label, in type: String)
: MethodVisitor, in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int)
Visitor, in className: String)
ode: byte): IMutationPoint
in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
in mutationPoint: IMutationPoint): IMutantBytecode
```

```

# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkFieldInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exception: String): boolean
# checkAnnotationDefault( in className: String): boolean
# checkAnnotation( in className: String, in desc: String, in visible: boolean): boolean
# checkParameterAnnotation( in className: String, in parameter: int, in desc: String, in visible: boolean): boolean
# checkAttribute( in className: String, in attr: Attribute): boolean
# checkCode( in className: String): boolean
# checkInsn( in className: String, in opcode: int): boolean
# checkIntInsn( in className: String, in opcode: int, in operand: int): boolean
# checkVarInsn( in className: String, in opcode: int, in var: int): boolean
# checkTypeInsn( in className: String, in opcode: int, in type: String): boolean
# checkFieldInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
# checkLabel( in className: String, in label: Label): boolean
# checkLdInsn( in className: String, in cst: Object): boolean
# checkInclInsn( in className: String, in var: int, in increment: int): boolean
# checkTableSwitchInsn( in className: String, in min: int, in max: int, in dflt: Label, in labels: Label): boolean
# checkLookupSwitchInsn( in className: String, in dflt: Label, in keys: int, in labels: Label): boolean
# checkMultiANewArrayInsn( in className: String, in desc: String, in dims: int): boolean
# checkTryCatchBlock( in className: String, in start: Label, in end: Label, in handler: Label, in type: String): boolean
# checkLocalVariable( in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label): boolean
# checkEnd( in className: String): boolean
# mutateAnnotationDefault( in mv: MethodVisitor, in className: String): AnnotationVisitor
# mutateAnnotation( in mv: MethodVisitor, in className: String, in desc: String, in visible: boolean): AnnotationVisitor
# mutateParameterAnnotation( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
# mutateAttribute( in mv: MethodVisitor, in className: String, in attr: Attribute)
# mutateCode( in mv: MethodVisitor, in className: String)
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# mutateIntInsn( in mv: MethodVisitor, in className: String, in opcode: int, in operand: int)
# mutateVarInsn( in mv: MethodVisitor, in className: String, in opcode: int, in var: int)
# mutateTypeInsn( in mv: MethodVisitor, in className: String, in opcode: int, in type: String)
# mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label)
# mutateLabel( in mv: MethodVisitor, in className: String, in label: Label)
# mutateLdInsn( in mv: MethodVisitor, in className: String, in cst: Object)
# mutateInclInsn( in mv: MethodVisitor, in className: String, in var: int, in increment: int)
# mutateTableSwitchInsn( in mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label)
# mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)
# mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
# mutateTryCatchBlock( in mv: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label)
# mutateLocalVariable( in mv: MethodVisitor, in className: String, in name: String, in desc: String, in signature: String)
# mutateEnd( in mv: MethodVisitor, in className: String)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String

```

```
n desc: String)  
in  
, in desc: String, in itf: boolean)
```

```
ater  
tions: String): boolean
```

```
in
```

```
n  
end: Label, in index: int): boolean
```

```
itor  
sible: boolean): AnnotationVisitor
```

```
n desc: String)  
, in desc: String, in itf: boolean)
```

```
els: Label)
```

```
, in type: String)  
tring, in start: Label, in end: Label, in index: int)
```

```
[# INIT: String [1]  
[# CLINIT: String [1]  
[# JAVA: String [1]  
[# THIS: String [1]
```

```
+ getDescription(): String  
+ checkFieldInsn( in className: String, in opcode: int, in desc: String, in itf: boolean): void  
+ mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in desc: String, in itf: boolean): void  
+ checkMethodInsn( in className: String, in opcode: int, in desc: String, in itf: boolean): void  
+ mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in desc: String, in itf: boolean): void  
+ createCountingClassMutator(): AbstractClassMutator  
+ createClassMutater( in classWriter: ClassVisitor, in mutationPoint: IMutationPoint): void  
+ checkMethod( in className: String, in access: int, in desc: String, in itf: boolean): void  
+ checkAnnotationDefault( in className: String): boolean  
+ checkAnnotation( in className: String, in desc: String, in itf: boolean): void  
+ checkParameterAnnotation( in className: String, in parameterIndex: int, in desc: String, in itf: boolean): void  
+ checkAttribute( in className: String, in attr: Attribute): void  
+ checkCode( in className: String): boolean  
+ checkInsn( in className: String, in opcode: int): boolean  
+ checkIntInsn( in className: String, in opcode: int, in value: int): void  
+ checkVarInsn( in className: String, in opcode: int, in var: int): void  
+ checkTypeInsn( in className: String, in opcode: int, in desc: String, in itf: boolean): void  
+ checkFieldInsn( in className: String, in opcode: int, in desc: String, in itf: boolean): void  
+ checkMethodInsn( in className: String, in opcode: int, in desc: String, in itf: boolean): void  
+ checkJumpInsn( in className: String, in opcode: int, in label: Label): void  
+ checkLabel( in className: String, in label: Label): boolean  
+ checkLdInsn( in className: String, in cst: Object): void  
+ checkLincInsn( in className: String, in var: int, in increment: int): void  
+ checkTableSwitchInsn( in className: String, in min: int, in max: int, in dflt: Label): void  
+ checkLookupSwitchInsn( in className: String, in dflt: Label, in min: int, in max: int, in labels: Label[]): void  
+ checkMultiANewArrayInsn( in className: String, in desc: String, in itf: boolean): void  
+ checkTryCatchBlock( in className: String, in start: Label, in end: Label, in handler: Label): void  
+ checkLocalVariable( in className: String, in name: String, in desc: String, in itf: boolean): void  
+ checkEnd( in className: String): boolean  
+ mutateAnnotationDefault( in mv: MethodVisitor, in className: String): void  
+ mutateAnnotation( in mv: MethodVisitor, in className: String, in desc: String, in itf: boolean): void  
+ mutateParameterAnnotation( in mv: MethodVisitor, in parameterIndex: int, in desc: String, in itf: boolean): void  
+ mutateAttribute( in mv: MethodVisitor, in className: String, in attr: Attribute): void  
+ mutateCode( in mv: MethodVisitor, in className: String, in desc: String, in itf: boolean): void  
+ mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int, in desc: String, in itf: boolean): void  
+ mutateIntInsn( in mv: MethodVisitor, in className: String, in opcode: int, in value: int): void  
+ mutateVarInsn( in mv: MethodVisitor, in className: String, in opcode: int, in var: int): void  
+ mutateTypeInsn( in mv: MethodVisitor, in className: String, in opcode: int, in desc: String, in itf: boolean): void  
+ mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in desc: String, in itf: boolean): void  
+ mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in desc: String, in itf: boolean): void  
+ mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label): void  
+ mutateLabel( in mv: MethodVisitor, in className: String, in label: Label): void  
+ mutateLdInsn( in mv: MethodVisitor, in className: String, in cst: Object): void  
+ mutateLincInsn( in mv: MethodVisitor, in className: String, in var: int, in increment: int): void  
+ mutateTableSwitchInsn( in mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label): void  
+ mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String, in dflt: Label, in min: int, in max: int, in labels: Label[]): void  
+ mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String, in desc: String, in itf: boolean): void  
+ mutateTryCatchBlock( in mv: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label): void  
+ mutateLocalVariable( in mv: MethodVisitor, in className: String, in name: String, in desc: String, in itf: boolean): void  
+ mutateEnd( in mv: MethodVisitor, in className: String): void  
+ getMutationPoints( in bytecode: byte): IMutationPoint[]  
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutationPoint: IMutationPoint): void  
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint, in mutationPointIndex: int): void  
+ getReaderFlags(): int  
+ getWriterFlags(): int  
+ getNormalString()
```

```
n owner: String, in name: String, in desc: String): boolean
String, in opcode: int, in owner: String, in name: String, in desc: String)
, in owner: String, in name: String, in desc: String): boolean
ie: String, in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)

actionPointIndex: int, in mutantIndex: int): AbstractClassMutater
name: String, in desc: String, in signature: String, in exceptions: String): boolean
|
in visible: boolean): boolean
parameter: int, in desc: String, in visible: boolean): boolean
: boolean

an
operand: int): boolean
var: int): boolean
n type: String): boolean
n owner: String, in name: String, in desc: String): boolean
, in owner: String, in name: String, in desc: String): boolean
in label: Label): boolean
ean
olean
ement: int): boolean
, in max: int, in dflt: Label, in labels: Label): boolean
label, in keys: int, in labels: Label): boolean
sc: String, in dims: int): boolean
el, in end: Label, in handler: Label, in type: String): boolean
ng, in desc: String, in signature: String, in start: Label, in end: Label, in index: int): boolean

ssName: String): AnnotationVisitor
e: String, in desc: String, in visible: boolean): AnnotationVisitor
className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
String, in attr: Attribute)
ng)
, in opcode: int)
ing, in opcode: int, in operand: int)
ring, in opcode: int, in var: int)
String, in opcode: int, in type: String)
String, in opcode: int, in owner: String, in name: String, in desc: String)
ie: String, in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)
String, in opcode: int, in label: Label)
ng, in label: Label)
ring, in cst: Object)
ring, in var: int, in increment: int)
Name: String, in min: int, in max: int, in dflt: Label, in labels: Label)
ssName: String, in dflt: Label, in keys: int, in labels: Label)
className: String, in desc: String, in dims: int)
ime: String, in start: Label, in end: Label, in handler: Label, in type: String)
me: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int)
()

in mutantIndex: int): IMutantBytecode
nPoint): IMutantBytecode
```

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label)
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
# checkAnnotationDefault( in className: String): boolean
# checkAnnotation( in className: String, in desc: String, in visible: boolean): boolean
# checkParameterAnnotation( in className: String, in parameter: int, in desc: String, in visible: boolean): boolean
# checkAttribute( in className: String, in attr: Attribute): boolean
# checkCode( in className: String): boolean
# checkInsn( in className: String, in opcode: int): boolean
# checkIntInsn( in className: String, in opcode: int, in operand: int): boolean
# checkVarInsn( in className: String, in opcode: int, in var: int): boolean
# checkTypeInsn( in className: String, in opcode: int, in type: String): boolean
# checkFieldInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
# checkLabel( in className: String, in label: Label): boolean
# checkLdInsn( in className: String, in cst: Object): boolean
# checkInclInsn( in className: String, in var: int, in increment: int): boolean
# checkTableSwitchInsn( in className: String, in min: int, in max: int, in dflt: Label, in labels: Label): boolean
# checkLookupSwitchInsn( in className: String, in dflt: Label, in keys: int, in labels: Label): boolean
# checkMultiANewArrayInsn( in className: String, in desc: String, in dims: int): boolean
# checkTryCatchBlock( in className: String, in start: Label, in end: Label, in handler: Label, in type: String): boolean
# checkLocalVariable( in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int): boolean
# checkEnd( in className: String): boolean
# mutateAnnotationDefault( in mv: MethodVisitor, in className: String): AnnotationVisitor
# mutateAnnotation( in mv: MethodVisitor, in className: String, in desc: String, in visible: boolean): AnnotationVisitor
# mutateParameterAnnotation( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
# mutateAttribute( in mv: MethodVisitor, in className: String, in attr: Attribute)
# mutateCode( in mv: MethodVisitor, in className: String)
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# mutateIntInsn( in mv: MethodVisitor, in className: String, in opcode: int, in operand: int)
# mutateVarInsn( in mv: MethodVisitor, in className: String, in opcode: int, in var: int)
# mutateTypeInsn( in mv: MethodVisitor, in className: String, in opcode: int, in type: String)
# mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label)
# mutateLabel( in mv: MethodVisitor, in className: String, in label: Label)
# mutateLdInsn( in mv: MethodVisitor, in className: String, in cst: Object)
# mutateInclInsn( in mv: MethodVisitor, in className: String, in var: int, in increment: int)
# mutateTableSwitchInsn( in mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label)
# mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)
# mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
# mutateTryCatchBlock( in mv: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label, in type: String)
# mutateLocalVariable( in mv: MethodVisitor, in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label)
# mutateEnd( in mv: MethodVisitor, in className: String)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
```

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: Label, in index: int)

INIT: String [1]
CLINIT: String [1]
JAVA: String [1]
THIS: String [1]

+ getDescription(): String
checkJumpInsn(in className: String, in opcode: int, in label: Label): boolean
mutateJumpInsn(in mv: MethodVisitor, in className: String, in opcode: int, in label: Label): void
createCountingClassMutater(): AbstractClassMutater
createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): void
checkMethod(in className: String, in access: int, in name: String, in desc: String, in signature: String): boolean
checkAnnotationDefault(in className: String): boolean
checkAnnotation(in className: String, in desc: String, in visible: boolean): boolean
checkParameterAnnotation(in className: String, in parameter: int, in desc: String, in signature: String): boolean
checkAttribute(in className: String, in attr: Attribute): boolean
checkCode(in className: String): boolean
checkInsn(in className: String, in opcode: int): boolean
checkIntInsn(in className: String, in opcode: int, in operand: int): boolean
checkVarInsn(in className: String, in opcode: int, in var: int): boolean
checkTypeInsn(in className: String, in opcode: int, in type: String): boolean
checkFieldInsn(in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
checkMethodInsn(in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
checkJumpInsn(in className: String, in opcode: int, in label: Label): boolean
checkLabel(in className: String, in label: Label): boolean
checkLdcInsn(in className: String, in cst: Object): boolean
checkInclInsn(in className: String, in var: int, in increment: int): boolean
checkTableSwitchInsn(in className: String, in min: int, in max: int, in dflt: Label, in labels: Label[]): void
checkLookupSwitchInsn(in className: String, in dflt: Label, in keys: int, in labels: Label[]): void
checkMultiANewArrayInsn(in className: String, in desc: String, in dims: int): boolean
checkTryCatchBlock(in className: String, in start: Label, in end: Label, in handler: Label, in exception: String): void
checkLocalVariable(in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label): void
checkEnd(in className: String): boolean
mutateAnnotationDefault(in mv: MethodVisitor, in className: String): AnnotationVisitResult
mutateAnnotation(in mv: MethodVisitor, in className: String, in desc: String, in visible: boolean): void
mutateParameterAnnotation(in mv: MethodVisitor, in className: String, in parameter: int, in desc: String): void
mutateAttribute(in mv: MethodVisitor, in className: String, in attr: Attribute): void
mutateCode(in mv: MethodVisitor, in className: String): void
mutateInsn(in mv: MethodVisitor, in className: String, in opcode: int): void
mutateIntInsn(in mv: MethodVisitor, in className: String, in opcode: int, in operand: int): void
mutateVarInsn(in mv: MethodVisitor, in className: String, in opcode: int, in var: int): void
mutateTypeInsn(in mv: MethodVisitor, in className: String, in opcode: int, in type: Type): void
mutateFieldInsn(in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String): void
mutateMethodInsn(in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String): void
mutateJumpInsn(in mv: MethodVisitor, in className: String, in opcode: int, in label: Label): void
mutateLabel(in mv: MethodVisitor, in className: String, in label: Label): void
mutateLdcInsn(in mv: MethodVisitor, in className: String, in cst: Object): void
mutateInclInsn(in mv: MethodVisitor, in className: String, in var: int, in increment: int): void
mutateTableSwitchInsn(in mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label[]): void
mutateLookupSwitchInsn(in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label[]): void
mutateMultiANewArrayInsn(in mv: MethodVisitor, in className: String, in desc: String, in dims: int): void
mutateTryCatchBlock(in mv: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label, in exception: String): void
mutateLocalVariable(in mv: MethodVisitor, in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label): void
mutateEnd(in mv: MethodVisitor, in className: String): void
+ getMutationPoints(in bytecode: byte): IMutationPoint
+ mutate(in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate(in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
getReaderFlags(): int
getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ getEnvironment(): Environment

IR_Ifge

```
: Label)

ndex: int): AbstractClassMutater
signature: String, in exceptions: String): boolean

visible: boolean): boolean

, in desc: String): boolean
ing, in desc: String): boolean

labels: Label): boolean
>el): boolean

bel, in type: String): boolean
e: String, in start: Label, in end: Label, in index: int): boolean

or
ble: boolean): AnnotationVisitor
r: int, in desc: String, in visible: boolean): AnnotationVisitor

i: int)

String)
r: String, in name: String, in desc: String)
ner: String, in name: String, in desc: String, in itf: boolean)
: Label)

int)
ax: int, in dflt: Label, in labels: Label)
n keys: int, in labels: Label)
g, in dims: int)
nd: Label, in handler: Label, in type: String)
desc: String, in signature: String, in start: Label, in end: Label, in index: int)

tcode
```

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkJumpInsn( in className)
# mutateJumpInsn( in mv: Method)
# createCountingClassMutator()
# createClassMutator( in className)
# checkMethod( in className)
# checkAnnotationDefault( in className)
# checkAnnotation( in className)
# checkParameterAnnotation( in className)
# checkAttribute( in className)
# checkCode( in className: String)
# checkInsn( in className: String)
# checkIntInsn( in className: String)
# checkVarInsn( in className: String)
# checkTypeInsn( in className)
# checkFieldInsn( in className)
# checkMethodInsn( in className)
# checkJumpInsn( in className)
# checkLabel( in className: String)
# checkLdcInsn( in className)
# checkInclInsn( in className)
# checkTableSwitchInsn( in className)
# checkLookupSwitchInsn( in className)
# checkMultiANewArrayInsn( in className)
# checkTryCatchBlock( in className)
# checkLocalVariable( in className)
# checkEnd( in className: String)
# mutateAnnotationDefault( in mv: Method)
# mutateAnnotation( in mv: Method)
# mutateParameterAnnotation( in mv: Method)
# mutateAttribute( in mv: Method)
# mutateCode( in mv: Method)
# mutateInsn( in mv: Method)
# mutateIntInsn( in mv: Method)
# mutateVarInsn( in mv: Method)
# mutateTypeInsn( in mv: Method)
# mutateFieldInsn( in mv: Method)
# mutateMethodInsn( in mv: Method)
# mutateJumpInsn( in mv: Method)
# mutateLabel( in mv: Method)
# mutateLdcInsn( in mv: Method)
# mutateInclInsn( in mv: Method)
# mutateTableSwitchInsn( in mv: Method)
# mutateLookupSwitchInsn( in mv: Method)
# mutateMultiANewArrayInsn( in mv: Method)
# mutateTryCatchBlock( in mv: Method)
# mutateLocalVariable( in mv: Method)
# mutateEnd( in mv: Method)

+ getMutationPoints( in bytecode)
+ mutate( in bytecode: byte)
+ mutate( in bytecode: byte)
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment( in environment)
```

```
ne: String, in opcode: int, in label: Label): boolean
ethodVisitor, in className: String, in opcode: int, in label: Label)
r(): AbstractClassMutater
;Writer: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
e: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
className: String): boolean
ame: String, in desc: String, in visible: boolean): boolean
in className: String, in parameter: int, in desc: String, in visible: boolean): boolean
e: String, in attr: Attribute): boolean
String): boolean
ring, in opcode: int): boolean
: String, in opcode: int, in operand: int): boolean
: String, in opcode: int, in var: int): boolean
e: String, in opcode: int, in type: String): boolean
e: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
Name: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
ne: String, in opcode: int, in label: Label): boolean
String, in label: Label): boolean
e: String, in cst: Object): boolean
e: String, in var: int, in increment: int): boolean
ssName: String, in min: int, in max: int, in dflt: Label, in labels: Label): boolean
className: String, in dflt: Label, in keys: int, in labels: Label): boolean
in className: String, in desc: String, in dims: int): boolean
sName: String, in start: Label, in end: Label, in handler: Label, in type: String): boolean
Name: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int): boolean
ring): boolean
in mv: MethodVisitor, in className: String): AnnotationVisitor
MethodVisitor, in className: String, in desc: String, in visible: boolean): AnnotationVisitor
n( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
thodVisitor, in className: String, in attr: Attribute)
dVisitor, in className: String)
Visitor, in className: String, in opcode: int)
odVisitor, in className: String, in opcode: int, in operand: int)
nodVisitor, in className: String, in opcode: int, in var: int)
thodVisitor, in className: String, in opcode: int, in type: String)
thodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)
ethodVisitor, in className: String, in opcode: int, in label: Label)
dVisitor, in className: String, in label: Label)
nodVisitor, in className: String, in cst: Object)
nodVisitor, in className: String, in var: int, in increment: int)
nv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label)
n nv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)
( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
/: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label, in type: String)
: MethodVisitor, in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int)
Visitor, in className: String)
code: byte): IMutationPoint
in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
in mutationPoint: IMutationPoint): IMutantBytecode
```

```

# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label)
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exception: String): boolean
# checkAnnotationDefault( in className: String): boolean
# checkAnnotation( in className: String, in desc: String, in visible: boolean): boolean
# checkParameterAnnotation( in className: String, in parameter: int, in desc: String, in visible: boolean): boolean
# checkAttribute( in className: String, in attr: Attribute): boolean
# checkCode( in className: String): boolean
# checkInsn( in className: String, in opcode: int): boolean
# checkIntInsn( in className: String, in opcode: int, in operand: int): boolean
# checkVarInsn( in className: String, in opcode: int, in var: int): boolean
# checkTypeInsn( in className: String, in opcode: int, in type: String): boolean
# checkFieldInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
# checkLabel( in className: String, in label: Label): boolean
# checkLdcInsn( in className: String, in cst: Object): boolean
# checkInclInsn( in className: String, in var: int, in increment: int): boolean
# checkTableSwitchInsn( in className: String, in min: int, in max: int, in dflt: Label, in labels: Label): boolean
# checkLookupSwitchInsn( in className: String, in dflt: Label, in keys: int, in labels: Label): boolean
# checkMultiANewArrayInsn( in className: String, in desc: String, in dims: int): boolean
# checkTryCatchBlock( in className: String, in start: Label, in end: Label, in handler: Label, in type: String): boolean
# checkLocalVariable( in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label): boolean
# checkEnd( in className: String): boolean
# mutateAnnotationDefault( in mv: MethodVisitor, in className: String): AnnotationVisitor
# mutateAnnotation( in mv: MethodVisitor, in className: String, in desc: String, in visible: boolean): AnnotationVisitor
# mutateParameterAnnotation( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
# mutateAttribute( in mv: MethodVisitor, in className: String, in attr: Attribute)
# mutateCode( in mv: MethodVisitor, in className: String)
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# mutateIntInsn( in mv: MethodVisitor, in className: String, in opcode: int, in operand: int)
# mutateVarInsn( in mv: MethodVisitor, in className: String, in opcode: int, in var: int)
# mutateTypeInsn( in mv: MethodVisitor, in className: String, in opcode: int, in type: String)
# mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label)
# mutateLabel( in mv: MethodVisitor, in className: String, in label: Label)
# mutateLdcInsn( in mv: MethodVisitor, in className: String, in cst: Object)
# mutateInclInsn( in mv: MethodVisitor, in className: String, in var: int, in increment: int)
# mutateTableSwitchInsn( in mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label)
# mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)
# mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
# mutateTryCatchBlock( in mv: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label)
# mutateLocalVariable( in mv: MethodVisitor, in className: String, in name: String, in desc: String, in signature: String)
# mutateEnd( in mv: MethodVisitor, in className: String)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ getEnvironment( in environment: IEnvironment)

```

ater
tions: String): boolean

an

n
end: Label, in index: int): boolean

sitor
sible: boolean): AnnotationVisitor

n desc: String)
, in desc: String, in itf: boolean)

els: Label)

, in type: String)
tring, in start: Label, in end: Label, in index: int)

```
[# INIT: String [1]
[# CLINIT: String [1]
[# JAVA: String [1]
[# THIS: String [1]
```

```
+ getDescription(): String
+ checkJumpInsn( in className: String, in opcode: int,
+ mutateJumpInsn( in mv: MethodVisitor, in className:
+ createCountingClassMutator(): AbstractClassMutator
+ createClassMutator( in classWriter: ClassVisitor, in mut
+ checkMethod( in className: String, in access: int, in i
+ checkAnnotationDefault( in className: String): boolean
+ checkAnnotation( in className: String, in desc: String,
+ checkParameterAnnotation( in className: String, in pa
+ checkAttribute( in className: String, in attr: Attribute)
+ checkCode( in className: String): boolean
+ checkInsn( in className: String, in opcode: int): boolean
+ checkIntInsn( in className: String, in opcode: int, in i
+ checkVarInsn( in className: String, in opcode: int, in v
+ checkTypeInsn( in className: String, in opcode: int, in
+ checkFieldInsn( in className: String, in opcode: int, i
+ checkMethodInsn( in className: String, in opcode: int,
+ checkJumpInsn( in className: String, in opcode: int,
+ checkLabel( in className: String, in label: Label): boolean
+ checkLdcInsn( in className: String, in cst: Object): boolean
+ checkInclInsn( in className: String, in var: int, in incr
+ checkTableSwitchInsn( in className: String, in min: int,
+ checkLookupSwitchInsn( in className: String, in dflt: L
+ checkMultiANewArrayInsn( in className: String, in de
+ checkTryCatchBlock( in className: String, in start: Lab
+ checkLocalVariable( in className: String, in name: Stri
+ checkEnd( in className: String): boolean
+ mutateAnnotationDefault( in mv: MethodVisitor, in cla
+ mutateAnnotation( in mv: MethodVisitor, in className:
+ mutateParameterAnnotation( in mv: MethodVisitor, in cla
+ mutateAttribute( in mv: MethodVisitor, in className: S
+ mutateCode( in mv: MethodVisitor, in className: Stri
+ mutateInsn( in mv: MethodVisitor, in className: String
+ mutateIntInsn( in mv: MethodVisitor, in className: St
+ mutateVarInsn( in mv: MethodVisitor, in className: St
+ mutateTypeInsn( in mv: MethodVisitor, in className: !
+ mutateFieldInsn( in mv: MethodVisitor, in className: !
+ mutateMethodInsn( in mv: MethodVisitor, in className: !
+ mutateJumpInsn( in mv: MethodVisitor, in className:
+ mutateLabel( in mv: MethodVisitor, in className: Stri
+ mutateLdcInsn( in mv: MethodVisitor, in className: Si
+ mutateInclInsn( in mv: MethodVisitor, in className: Si
+ mutateTableSwitchInsn( in mv: MethodVisitor, in class
+ mutateLookupSwitchInsn( in mv: MethodVisitor, in clas
+ mutateMultiANewArrayInsn( in mv: MethodVisitor, in de
+ mutateTryCatchBlock( in mv: MethodVisitor, in classNa
+ mutateLocalVariable( in mv: MethodVisitor, in classNa
+ mutateEnd( in mv: MethodVisitor, in className: String
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int,
+ mutate( in bytecode: byte, in mutationPoint: IMutationP
+ getReaderFlags(): int
+ getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ getEnvironment( in environment: IEnvironment)
```

```
in label: Label): boolean
String, in opcode: int, in label: Label)

actionPointIndex: int, in mutantIndex: int): AbstractClassMutater
name: String, in desc: String, in signature: String, in exceptions: String): boolean
1
    in visible: boolean): boolean
parameter: int, in desc: String, in visible: boolean): boolean
: boolean

an
operand: int): boolean
var: int): boolean
n type: String): boolean
n owner: String, in name: String, in desc: String): boolean
;, in owner: String, in name: String, in desc: String): boolean
in label: Label): boolean
ean
olean
ement: int): boolean
;, in max: int, in dflt: Label, in labels: Label): boolean
label, in keys: int, in labels: Label): boolean
sc: String, in dims: int): boolean
el, in end: Label, in handler: Label, in type: String): boolean
ng, in desc: String, in signature: String, in start: Label, in end: Label, in index: int): boolean

ssName: String): AnnotationVisitor
e: String, in desc: String, in visible: boolean): AnnotationVisitor
className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
String, in attr: Attribute)
1g)
g, in opcode: int)
ring, in opcode: int, in operand: int)
ring, in opcode: int, in var: int)
String, in opcode: int, in type: String)
String, in opcode: int, in owner: String, in name: String, in desc: String)
e: String, in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)
String, in opcode: int, in label: Label)
ng, in label: Label)
tring, in cst: Object)
tring, in var: int, in increment: int)
Name: String, in min: int, in max: int, in dflt: Label, in labels: Label)
ssName: String, in dflt: Label, in keys: int, in labels: Label)
className: String, in desc: String, in dims: int)
ame: String, in start: Label, in end: Label, in handler: Label, in type: String)
me: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int)
)

in mutantIndex: int): IMutantBytecode
nPoint): IMutantBytecode
```

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label)
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
# checkAnnotationDefault( in className: String): boolean
# checkAnnotation( in className: String, in desc: String, in visible: boolean): boolean
# checkParameterAnnotation( in className: String, in parameter: int, in desc: String, in visible: boolean): boolean
# checkAttribute( in className: String, in attr: Attribute): boolean
# checkCode( in className: String): boolean
# checkInsn( in className: String, in opcode: int): boolean
# checkIntInsn( in className: String, in opcode: int, in operand: int): boolean
# checkVarInsn( in className: String, in opcode: int, in var: int): boolean
# checkTypeInsn( in className: String, in opcode: int, in type: String): boolean
# checkFieldInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
# checkLabel( in className: String, in label: Label): boolean
# checkLdcInsn( in className: String, in cst: Object): boolean
# checkInclInsn( in className: String, in var: int, in increment: int): boolean
# checkTableSwitchInsn( in className: String, in min: int, in max: int, in dflt: Label, in labels: Label): boolean
# checkLookupSwitchInsn( in className: String, in dflt: Label, in keys: int, in labels: Label): boolean
# checkMultiANewArrayInsn( in className: String, in desc: String, in dims: int): boolean
# checkTryCatchBlock( in className: String, in start: Label, in end: Label, in handler: Label, in type: String): boolean
# checkLocalVariable( in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int): boolean
# checkEnd( in className: String): boolean
# mutateAnnotationDefault( in mv: MethodVisitor, in className: String): AnnotationVisitor
# mutateAnnotation( in mv: MethodVisitor, in className: String, in desc: String, in visible: boolean): AnnotationVisitor
# mutateParameterAnnotation( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
# mutateAttribute( in mv: MethodVisitor, in className: String, in attr: Attribute)
# mutateCode( in mv: MethodVisitor, in className: String)
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# mutateIntInsn( in mv: MethodVisitor, in className: String, in opcode: int, in operand: int)
# mutateVarInsn( in mv: MethodVisitor, in className: String, in opcode: int, in var: int)
# mutateTypeInsn( in mv: MethodVisitor, in className: String, in opcode: int, in type: String)
# mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in ift: boolean)
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label)
# mutateLabel( in mv: MethodVisitor, in className: String, in label: Label)
# mutateLdcInsn( in mv: MethodVisitor, in className: String, in cst: Object)
# mutateInclInsn( in mv: MethodVisitor, in className: String, in var: int, in increment: int)
# mutateTableSwitchInsn( in mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label)
# mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)
# mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
# mutateTryCatchBlock( in mv: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label, in type: String)
# mutateLocalVariable( in mv: MethodVisitor, in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label)
# mutateEnd( in mv: MethodVisitor, in className: String)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ getEnvironment( in environment: IEnvironment)
```

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d: Label, in index: int)

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label)
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutant)
# checkMethod( in className: String, in access: int, in name: String, in desc: String, ir)
# checkAnnotationDefault( in className: String): boolean
# checkAnnotation( in className: String, in desc: String, in visible: boolean): boolean
# checkParameterAnnotation( in className: String, in parameter: int, in desc: String, ir)
# checkAttribute( in className: String, in attr: Attribute): boolean
# checkCode( in className: String): boolean
# checkInsn( in className: String, in opcode: int): boolean
# checkIntInsn( in className: String, in opcode: int, in operand: int): boolean
# checkVarInsn( in className: String, in opcode: int, in var: int): boolean
# checkTypeInsn( in className: String, in opcode: int, in type: String): boolean
# checkFieldInsn( in className: String, in opcode: int, in owner: String, in name: String)
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String)
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
# checkLabel( in className: String, in label: Label): boolean
# checkLdcInsn( in className: String, in cst: Object): boolean
# checkInclInsn( in className: String, in var: int, in increment: int): boolean
# checkTableSwitchInsn( in className: String, in min: int, in max: int, in dflt: Label, in)
# checkLookupSwitchInsn( in className: String, in dflt: Label, in keys: int, in labels: Label)
# checkMultiANewArrayInsn( in className: String, in desc: String, in dims: int): boolean
# checkTryCatchBlock( in className: String, in start: Label, in end: Label, in handler: Label)
# checkLocalVariable( in className: String, in name: String, in desc: String, in signature)
# checkEnd( in className: String): boolean
# mutateAnnotationDefault( in mv: MethodVisitor, in className: String): AnnotationVisi
# mutateAnnotation( in mv: MethodVisitor, in className: String, in desc: String, in visi
# mutateParameterAnnotation( in mv: MethodVisitor, in className: String, in paramete
# mutateAttribute( in mv: MethodVisitor, in className: String, in attr: Attribute)
# mutateCode( in mv: MethodVisitor, in className: String)
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# mutateIntInsn( in mv: MethodVisitor, in className: String, in opcode: int, in operan
# mutateVarInsn( in mv: MethodVisitor, in className: String, in opcode: int, in var: int)
# mutateTypeInsn( in mv: MethodVisitor, in className: String, in opcode: int, in type:
# mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in own
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in ov
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label)
# mutateLabel( in mv: MethodVisitor, in className: String, in label: Label)
# mutateLdcInsn( in mv: MethodVisitor, in className: String, in cst: Object)
# mutateInclInsn( in mv: MethodVisitor, in className: String, in var: int, in increment:
# mutateTableSwitchInsn( in mv: MethodVisitor, in className: String, in min: int, in ma
# mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String, in dflt: Label, i
# mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String, in desc: String)
# mutateTryCatchBlock( in mv: MethodVisitor, in className: String, in start: Label, in e
# mutateLocalVariable( in mv: MethodVisitor, in className: String, in name: String, in
# mutateEnd( in mv: MethodVisitor, in className: String)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBy
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ getEnvironment( in environment: IEnvironment)
```

JIR_Ifgt

```
: Label)

ndex: int): AbstractClassMutater
signature: String, in exceptions: String): boolean
```

```
visible: boolean): boolean
```

```
, in desc: String): boolean
ring, in desc: String): boolean
```

```
labels: Label): boolean
sel): boolean
```

```
label, in type: String): boolean
e: String, in start: Label, in end: Label, in index: int): boolean

tor
ible: boolean): AnnotationVisitor
er: int, in desc: String, in visible: boolean): AnnotationVisitor
```

```
: int)
)
String)
r: String, in name: String, in desc: String)
wner: String, in name: String, in desc: String, in itf: boolean)
: Label)
```

```
int)
ax: int, in dflt: Label, in labels: Label)
in keys: int, in labels: Label)
ig, in dims: int)
end: Label, in handler: Label, in type: String)
desc: String, in signature: String, in start: Label, in end: Label, in index: int)
```

```
/tcode
```

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]
```

```
+ getDescription(): String
# checkJumpInsn( in className)
# mutateJumpInsn( in mv: Method)
# createCountingClassMutate
# createClassMutater( in className)
# checkMethod( in className)
# checkAnnotationDefault( in mv)
# checkAnnotation( in className)
# checkParameterAnnotation( in mv)
# checkAttribute( in className)
# checkCode( in className: String)
# checkInsn( in className: String)
# checkIntInsn( in className)
# checkVarInsn( in className)
# checkTypeInsn( in className)
# checkFieldInsn( in className)
# checkMethodInsn( in className)
# checkJumpInsn( in className)
# checkLabel( in className: String)
# checkLdcInsn( in className)
# checkInclInsn( in className)
# checkTableSwitchInsn( in mv)
# checkLookupSwitchInsn( in mv)
# checkMultiANewArrayInsn( in mv)
# checkTryCatchBlock( in mv)
# checkLocalVariable( in mv)
# checkEnd( in className: String)
# mutateAnnotationDefault( in mv)
# mutateAnnotation( in mv: Method)
# mutateParameterAnnotation( in mv)
# mutateAttribute( in mv: Method)
# mutateCode( in mv: Method)
# mutateInsn( in mv: Method)
# mutateIntInsn( in mv: Method)
# mutateVarInsn( in mv: Method)
# mutateTypeInsn( in mv: Method)
# mutateFieldInsn( in mv: Method)
# mutateMethodInsn( in mv: Method)
# mutateJumpInsn( in mv: Method)
# mutateLabel( in mv: Method)
# mutateLdcInsn( in mv: Method)
# mutateInclInsn( in mv: Method)
# mutateTableSwitchInsn( in mv)
# mutateLookupSwitchInsn( in mv)
# mutateMultiANewArrayInsn( in mv)
# mutateTryCatchBlock( in mv)
# mutateLocalVariable( in mv)
# mutateEnd( in mv: Method)
+ getMutationPoints( in bytecode)
+ mutate( in bytecode: byte,
+ mutate( in bytecode: byte,
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ getEnvironment(): in environment
```

```
ne: String, in opcode: int, in label: Label): boolean
ethodVisitor, in className: String, in opcode: int, in label: Label)
r(): AbstractClassMutater
sWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
e: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
i className: String): boolean
ame: String, in desc: String, in visible: boolean): boolean
: in className: String, in parameter: int, in desc: String, in visible: boolean): boolean
ne: String, in attr: Attribute): boolean
String): boolean
ring, in opcode: int): boolean
: String, in opcode: int, in operand: int): boolean
: String, in opcode: int, in var: int): boolean
ne: String, in opcode: int, in type: String): boolean
ne: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
Name: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
ne: String, in opcode: int, in label: Label): boolean
String, in label: Label): boolean
e: String, in cst: Object): boolean
e: String, in var: int, in increment: int): boolean
ssName: String, in min: int, in max: int, in dflt: Label, in labels: Label): boolean
className: String, in dflt: Label, in keys: int, in labels: Label): boolean
in className: String, in desc: String, in dims: int): boolean
sName: String, in start: Label, in end: Label, in handler: Label, in type: String): boolean
Name: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int): boolean
ring): boolean
in mv: MethodVisitor, in className: String): AnnotationVisitor
MethodVisitor, in className: String, in desc: String, in visible: boolean): AnnotationVisitor
n( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
ethodVisitor, in className: String, in attr: Attribute)
dVisitor, in className: String)
Visitor, in className: String, in opcode: int)
odVisitor, in className: String, in opcode: int, in operand: int)
odVisitor, in className: String, in opcode: int, in var: int)
thodVisitor, in className: String, in opcode: int, in type: String)
thodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)
ethodVisitor, in className: String, in opcode: int, in label: Label)
dVisitor, in className: String, in label: Label)
odVisitor, in className: String, in cst: Object)
odVisitor, in className: String, in var: int, in increment: int)
mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label)
n mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)
( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
v: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label, in type: String)
: MethodVisitor, in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int)
Visitor, in className: String)
code: byte): IMutationPoint
in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
in mutationPoint: IMutationPoint): IMutantBytecode
```

```

# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkInsn( in className: String, in opcode: int): boolean
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exception: String): boolean
# checkAnnotationDefault( in className: String): boolean
# checkAnnotation( in className: String, in desc: String, in visible: boolean): boolean
# checkParameterAnnotation( in className: String, in parameter: int, in desc: String, in visible: boolean): boolean
# checkAttribute( in className: String, in attr: Attribute): boolean
# checkCode( in className: String): boolean
# checkInsn( in className: String, in opcode: int): boolean
# checkIntInsn( in className: String, in opcode: int, in operand: int): boolean
# checkVarInsn( in className: String, in opcode: int, in var: int): boolean
# checkTypeInsn( in className: String, in opcode: int, in type: String): boolean
# checkFieldInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
# checkLabel( in className: String, in label: Label): boolean
# checkLdcInsn( in className: String, in cst: Object): boolean
# checkInclInsn( in className: String, in var: int, in increment: int): boolean
# checkTableSwitchInsn( in className: String, in min: int, in max: int, in dflt: Label, in labels: Label): boolean
# checkLookupSwitchInsn( in className: String, in dflt: Label, in keys: int, in labels: Label): boolean
# checkMultiANewArrayInsn( in className: String, in desc: String, in dims: int): boolean
# checkTryCatchBlock( in className: String, in start: Label, in end: Label, in handler: Label, in type: String): boolean
# checkLocalVariable( in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label): boolean
# checkEnd( in className: String): boolean
# mutateAnnotationDefault( in mv: MethodVisitor, in className: String): AnnotationVisitor
# mutateAnnotation( in mv: MethodVisitor, in className: String, in desc: String, in visible: boolean): AnnotationVisitor
# mutateParameterAnnotation( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
# mutateAttribute( in mv: MethodVisitor, in className: String, in attr: Attribute)
# mutateCode( in mv: MethodVisitor, in className: String)
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# mutateIntInsn( in mv: MethodVisitor, in className: String, in opcode: int, in operand: int)
# mutateVarInsn( in mv: MethodVisitor, in className: String, in opcode: int, in var: int)
# mutateTypeInsn( in mv: MethodVisitor, in className: String, in opcode: int, in type: String)
# mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label)
# mutateLabel( in mv: MethodVisitor, in className: String, in label: Label)
# mutateLdcInsn( in mv: MethodVisitor, in className: String, in cst: Object)
# mutateInclInsn( in mv: MethodVisitor, in className: String, in var: int, in increment: int)
# mutateTableSwitchInsn( in mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label)
# mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)
# mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
# mutateTryCatchBlock( in mv: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label)
# mutateLocalVariable( in mv: MethodVisitor, in className: String, in name: String, in desc: String, in signature: String)
# mutateEnd( in mv: MethodVisitor, in className: String)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ getEnvironment( in environment: IEnvironment)
```

```
    ater  
    options: String): boolean
```

an

in
end: Label, in index: int): boolean

sitor
sible: boolean): AnnotationVisitor

in desc: String)
, in desc: String, in itf: boolean)

els: Label)

l, in type: String)
tring, in start: Label, in end: Label, in index: int)

```
# INIT: String [1]  
# CLINIT: String [1]  
# JAVA: String [1]  
# THIS: String [1]
```

```
+ getDescription(): String  
+ checkInsn( in className: String, in opcode: int): boolean  
+ mutateInsn( in mv: MethodVisitor, in className: String)  
+ createCountingClassMutator(): AbstractClassMutator  
+ createClassMutator( in classWriter: ClassVisitor, in mutator: AbstractClassMutator)  
+ checkMethod( in className: String, in access: int, in desc: String): boolean  
+ checkAnnotationDefault( in className: String): boolean  
+ checkAnnotation( in className: String, in desc: String): boolean  
+ checkParameterAnnotation( in className: String, in parameterName: String): boolean  
+ checkAttribute( in className: String, in attr: Attribute): boolean  
+ checkCode( in className: String): boolean  
+ checkInsn( in className: String, in opcode: int): boolean  
+ checkIntInsn( in className: String, in opcode: int, in value: int): boolean  
+ checkVarInsn( in className: String, in opcode: int, in var: int): boolean  
+ checkTypeInsn( in className: String, in opcode: int, in desc: String): boolean  
+ checkFieldInsn( in className: String, in opcode: int, in name: String, in type: String): boolean  
+ checkMethodInsn( in className: String, in opcode: int, in name: String, in desc: String): boolean  
+ checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean  
+ checkLabel( in className: String, in label: Label): boolean  
+ checkLdcInsn( in className: String, in cst: Object): boolean  
+ checkInclInsn( in className: String, in var: int, in incr: int): boolean  
+ checkTableSwitchInsn( in className: String, in min: int, in max: int, in labels: Label): boolean  
+ checkLookupSwitchInsn( in className: String, in dflt: Label, in labels: Label): boolean  
+ checkMultiANewArrayInsn( in className: String, in desc: String): boolean  
+ checkTryCatchBlock( in className: String, in start: Label, in end: Label, in filter: Label): boolean  
+ checkLocalVariable( in className: String, in name: String, in desc: String, in type: String): boolean  
+ checkEnd( in className: String): boolean  
+ mutateAnnotationDefault( in mv: MethodVisitor, in className: String): void  
+ mutateAnnotation( in mv: MethodVisitor, in className: String): void  
+ mutateParameterAnnotation( in mv: MethodVisitor, in parameterName: String): void  
+ mutateAttribute( in mv: MethodVisitor, in className: String): void  
+ mutateCode( in mv: MethodVisitor, in className: String): void  
+ mutateInsn( in mv: MethodVisitor, in className: String): void  
+ mutateIntInsn( in mv: MethodVisitor, in className: String): void  
+ mutateVarInsn( in mv: MethodVisitor, in className: String): void  
+ mutateTypeInsn( in mv: MethodVisitor, in className: String): void  
+ mutateFieldInsn( in mv: MethodVisitor, in className: String): void  
+ mutateMethodInsn( in mv: MethodVisitor, in className: String): void  
+ mutateJumpInsn( in mv: MethodVisitor, in className: String): void  
+ mutateLabel( in mv: MethodVisitor, in className: String): void  
+ mutateLdcInsn( in mv: MethodVisitor, in className: String): void  
+ mutateInclInsn( in mv: MethodVisitor, in className: String): void  
+ mutateTableSwitchInsn( in mv: MethodVisitor, in className: String): void  
+ mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String): void  
+ mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String): void  
+ mutateTryCatchBlock( in mv: MethodVisitor, in className: String): void  
+ mutateLocalVariable( in mv: MethodVisitor, in className: String): void  
+ mutateEnd( in mv: MethodVisitor, in className: String): void  
+ getMutationPoints( in bytecode: byte): IMutationPoint[]  
+ mutate( in bytecode: byte, in mutationPointIndex: int): void  
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): void  
# getReaderFlags(): int  
# getWriterFlags(): int  
+ getName(): String  
+ getDescription(): String  
+ getEnvironment( in environment: IEnvironment): Environment
```

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```
an
g, in opcode: int)

:ationPointIndex: int, in mutantIndex: int): AbstractClassMutater
name: String, in desc: String, in signature: String, in exceptions: String): boolean
1
, in visible: boolean): boolean
arameter: int, in desc: String, in visible: boolean): boolean
: boolean

an
operand: int): boolean
var: int): boolean
n type: String): boolean
n owner: String, in name: String, in desc: String): boolean
t, in owner: String, in name: String, in desc: String): boolean
in label: Label): boolean
ean
olean
ement: int): boolean
t, in max: int, in dflt: Label, in labels: Label): boolean
Label, in keys: int, in labels: Label): boolean
sc: String, in dims: int): boolean
el, in end: Label, in handler: Label, in type: String): boolean
ing, in desc: String, in signature: String, in start: Label, in end: Label, in index: int): boolean

assName: String): AnnotationVisitor
e: String, in desc: String, in visible: boolean): AnnotationVisitor
iclassName: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
String, in attr: Attribute)
ng)
g, in opcode: int)
ring, in opcode: int, in operand: int)
tring, in opcode: int, in var: int)
String, in opcode: int, in type: String)
String, in opcode: int, in owner: String, in name: String, in desc: String)
ne: String, in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)
String, in opcode: int, in label: Label)
ng, in label: Label)
tring, in cst: Object)
tring, in var: int, in increment: int)
Name: String, in min: int, in max: int, in dflt: Label, in labels: Label)
issName: String, in dflt: Label, in keys: int, in labels: Label)
className: String, in desc: String, in dims: int)
ame: String, in start: Label, in end: Label, in handler: Label, in type: String)
me: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int)
)

in mutantIndex: int): IMutantBytecode
nPoint): IMutantBytecode
```

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
+ checkInsn( in className: String, in opcode: int): boolean
+ mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
+ createCountingClassMutater(): AbstractClassMutater
+ createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
+ checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
+ checkAnnotationDefault( in className: String): boolean
+ checkAnnotation( in className: String, in desc: String, in visible: boolean): boolean
+ checkParameterAnnotation( in className: String, in parameter: int, in desc: String, in visible: boolean): boolean
+ checkAttribute( in className: String, in attr: Attribute): boolean
+ checkCode( in className: String): boolean
+ checkInsn( in className: String, in opcode: int): boolean
+ checkIntInsn( in className: String, in opcode: int, in operand: int): boolean
+ checkVarInsn( in className: String, in opcode: int, in var: int): boolean
+ checkTypeInsn( in className: String, in opcode: int, in type: String): boolean
+ checkFieldInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
+ checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
+ checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
+ checkLabel( in className: String, in label: Label): boolean
+ checkLdcInsn( in className: String, in cst: Object): boolean
+ checkLincInsn( in className: String, in var: int, in increment: int): boolean
+ checkTableSwitchInsn( in className: String, in min: int, in max: int, in dflt: Label, in labels: Label): boolean
+ checkLookupSwitchInsn( in className: String, in dflt: Label, in keys: int, in labels: Label): boolean
+ checkMultiANewArrayInsn( in className: String, in desc: String, in dims: int): boolean
+ checkTryCatchBlock( in className: String, in start: Label, in end: Label, in handler: Label, in type: String): boolean
+ checkLocalVariable( in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int): boolean
+ checkEnd( in className: String): boolean
+ mutateAnnotationDefault( in mv: MethodVisitor, in className: String): AnnotationVisitor
+ mutateAnnotation( in mv: MethodVisitor, in className: String, in desc: String, in visible: boolean): AnnotationVisitor
+ mutateParameterAnnotation( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
+ mutateAttribute( in mv: MethodVisitor, in className: String, in attr: Attribute)
+ mutateCode( in mv: MethodVisitor, in className: String)
+ mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
+ mutateIntInsn( in mv: MethodVisitor, in className: String, in opcode: int, in operand: int)
+ mutateVarInsn( in mv: MethodVisitor, in className: String, in opcode: int, in var: int)
+ mutateTypeInsn( in mv: MethodVisitor, in className: String, in opcode: int, in type: String)
+ mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
+ mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in ift: boolean)
+ mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label)
+ mutateLabel( in mv: MethodVisitor, in className: String, in label: Label)
+ mutateLdcInsn( in mv: MethodVisitor, in className: String, in cst: Object)
+ mutateLincInsn( in mv: MethodVisitor, in className: String, in var: int, in increment: int)
+ mutateTableSwitchInsn( in mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label)
+ mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)
+ mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
+ mutateTryCatchBlock( in mv: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label, in type: String)
+ mutateLocalVariable( in mv: MethodVisitor, in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label)
+ mutateEnd( in mv: MethodVisitor, in className: String)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment( in environment: IEnvironment)
```

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d: Label, in index: int)

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkInsn( in className: String, in opcode: int): boolean
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutant)
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature)
# checkAnnotationDefault( in className: String): boolean
# checkAnnotation( in className: String, in desc: String, in visible: boolean): boolean
# checkParameterAnnotation( in className: String, in parameter: int, in desc: String, in signature)
# checkAttribute( in className: String, in attr: Attribute): boolean
# checkCode( in className: String): boolean
# checkInsn( in className: String, in opcode: int): boolean
# checkIntInsn( in className: String, in opcode: int, in operand: int): boolean
# checkVarInsn( in className: String, in opcode: int, in var: int): boolean
# checkTypeInsn( in className: String, in opcode: int, in type: String): boolean
# checkFieldInsn( in className: String, in opcode: int, in owner: String, in name: String)
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String)
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
# checkLabel( in className: String, in label: Label): boolean
# checkLdcInsn( in className: String, in cst: Object): boolean
# checkInclInsn( in className: String, in var: int, in increment: int): boolean
# checkTableSwitchInsn( in className: String, in min: int, in max: int, in dflt: Label, in keys: int, in labels: Label[])
# checkLookupSwitchInsn( in className: String, in dflt: Label, in keys: int, in labels: Label[])
# checkMultiANewArrayInsn( in className: String, in desc: String, in dims: int): boolean
# checkTryCatchBlock( in className: String, in start: Label, in end: Label, in handler: Label)
# checkLocalVariable( in className: String, in name: String, in desc: String, in signature)
# checkEnd( in className: String): boolean
# mutateAnnotationDefault( in mv: MethodVisitor, in className: String): AnnotationVisitor
# mutateAnnotation( in mv: MethodVisitor, in className: String, in desc: String, in visible)
# mutateParameterAnnotation( in mv: MethodVisitor, in className: String, in parameter)
# mutateAttribute( in mv: MethodVisitor, in className: String, in attr: Attribute)
# mutateCode( in mv: MethodVisitor, in className: String)
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# mutateIntInsn( in mv: MethodVisitor, in className: String, in opcode: int, in operand)
# mutateVarInsn( in mv: MethodVisitor, in className: String, in opcode: int, in var: int)
# mutateTypeInsn( in mv: MethodVisitor, in className: String, in opcode: int, in type)
# mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner)
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner)
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label)
# mutateLabel( in mv: MethodVisitor, in className: String, in label: Label)
# mutateLdcInsn( in mv: MethodVisitor, in className: String, in cst: Object)
# mutateInclInsn( in mv: MethodVisitor, in className: String, in var: int, in increment)
# mutateTableSwitchInsn( in mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in keys: int, in labels: Label[])
# mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label[])
# mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
# mutateTryCatchBlock( in mv: MethodVisitor, in className: String, in start: Label, in end: Label)
# mutateLocalVariable( in mv: MethodVisitor, in className: String, in name: String, in signature)
# mutateEnd( in mv: MethodVisitor, in className: String)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ getEnvironment( in environment: IEnvironment): IEnvironment
```

LIR_Or

```
Index: int): AbstractClassMutater
n signature: String, in exceptions: String): boolean

n visible: boolean): boolean

}, in desc: String): boolean
ring, in desc: String): boolean

labels: Label): boolean
bel): boolean
l
abel, in type: String): boolean
e: String, in start: Label, in end: Label, in index: int): boolean

tor
ible: boolean): AnnotationVisitor
er: int, in desc: String, in visible: boolean): AnnotationVisitor

d: int)
)
String)
r: String, in name: String, in desc: String)
vner: String, in name: String, in desc: String, in itf: boolean)
: Label)

int)
ax: int, in dflt: Label, in labels: Label)
in keys: int, in labels: Label)
ig, in dims: int)
end: Label, in handler: Label, in type: String)
desc: String, in signature: String, in start: Label, in end: Label, in index: int)

ytecode
```

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkInsn( in className: String)
# mutateInsn( in mv: Method)
# createCountingClassMutate()
# createClassMutater( in className)
# checkMethod( in className)
# checkAnnotationDefault( in className)
# checkAnnotation( in className)
# checkParameterAnnotation( in className)
# checkAttribute( in className)
# checkCode( in className)
# checkInsn( in className)
# checkIntInsn( in className)
# checkVarInsn( in className)
# checkTypeInsn( in className)
# checkFieldInsn( in className)
# checkMethodInsn( in className)
# checkJumpInsn( in className)
# checkLabel( in className)
# checkLdcInsn( in className)
# checkInclInsn( in className)
# checkTableSwitchInsn( in className)
# checkLookupSwitchInsn( in className)
# checkMultiANewArrayInsn( in className)
# checkTryCatchBlock( in className)
# checkLocalVariable( in className)
# checkEnd( in className)
# mutateAnnotationDefault( in mv)
# mutateAnnotation( in mv)
# mutateParameterAnnotation( in mv)
# mutateAttribute( in mv)
# mutateCode( in mv)
# mutateInsn( in mv)
# mutateIntInsn( in mv)
# mutateVarInsn( in mv)
# mutateTypeInsn( in mv)
# mutateFieldInsn( in mv)
# mutateMethodInsn( in mv)
# mutateJumpInsn( in mv)
# mutateLabel( in mv)
# mutateLdcInsn( in mv)
# mutateInclInsn( in mv)
# mutateTableSwitchInsn( in mv)
# mutateLookupSwitchInsn( in mv)
# mutateMultiANewArrayInsn( in mv)
# mutateTryCatchBlock( in mv)
# mutateLocalVariable( in mv)
# mutateEnd( in mv)
Method)
+ getMutationPoints( in bytecode)
+ mutate( in bytecode)
+ mutate( in bytecode)
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ getEnvironment(): in environment
```

```
tring, in opcode: int): boolean
IVisitor, in className: String, in opcode: int)
:r(): AbstractClassMutater
sWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
e: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
\ className: String): boolean
lame: String, in desc: String, in visible: boolean): boolean
( in className: String, in parameter: int, in desc: String, in visible: boolean): boolean
ne: String, in attr: Attribute): boolean
String): boolean
tring, in opcode: int): boolean
: String, in opcode: int, in operand: int): boolean
e: String, in opcode: int, in var: int): boolean
ne: String, in opcode: int, in type: String): boolean
ne: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
Name: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
me: String, in opcode: int, in label: Label): boolean
String, in label: Label): boolean
e: String, in cst: Object): boolean
e: String, in var: int, in increment: int): boolean
assName: String, in min: int, in max: int, in dflt: Label, in labels: Label): boolean
\ className: String, in dflt: Label, in keys: int, in labels: Label): boolean
in className: String, in desc: String, in dims: int): boolean
sName: String, in start: Label, in end: Label, in handler: Label, in type: String): boolean
sName: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int): boolean
ring): boolean
in mv: MethodVisitor, in className: String): AnnotationVisitor
MethodVisitor, in className: String, in desc: String, in visible: boolean): AnnotationVisitor
n( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
ethodVisitor, in className: String, in attr: Attribute)
dVisitor, in className: String)
IVisitor, in className: String, in opcode: int)
hodVisitor, in className: String, in opcode: int, in operand: int)
hodVisitor, in className: String, in opcode: int, in var: int)
ethodVisitor, in className: String, in opcode: int, in type: String)
ethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)
ethodVisitor, in className: String, in opcode: int, in label: Label)
dVisitor, in className: String, in label: Label)
hodVisitor, in className: String, in cst: Object)
hodVisitor, in className: String, in var: int, in increment: int)
mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label)
in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)
i( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
v: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label, in type: String)
: MethodVisitor, in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int)
Visitor, in className: String)
code: byte): IMutationPoint
in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
in mutationPoint: IMutationPoint): IMutantBytecode
```

```

# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
# createCountingClassMutater(): AbstractClassMutater
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exception: String): boolean
# checkAnnotationDefault( in className: String): boolean
# checkAnnotation( in className: String, in desc: String, in visible: boolean): boolean
# checkParameterAnnotation( in className: String, in parameter: int, in desc: String, in visible: boolean): boolean
# checkAttribute( in className: String, in attr: Attribute): boolean
# checkCode( in className: String): boolean
# checkInsn( in className: String, in opcode: int): boolean
# checkIntInsn( in className: String, in opcode: int, in operand: int): boolean
# checkVarInsn( in className: String, in opcode: int, in var: int): boolean
# checkTypeInsn( in className: String, in opcode: int, in type: String): boolean
# checkFieldInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
# checkLabel( in className: String, in label: Label): boolean
# checkLdcInsn( in className: String, in cst: Object): boolean
# checkLineInsn( in className: String, in var: int, in increment: int): boolean
# checkTableSwitchInsn( in className: String, in min: int, in max: int, in dflt: Label, in labels: Label): boolean
# checkLookupSwitchInsn( in className: String, in dflt: Label, in keys: int, in labels: Label): boolean
# checkMultiANewArrayInsn( in className: String, in desc: String, in dims: int): boolean
# checkTryCatchBlock( in className: String, in start: Label, in end: Label, in handler: Label, in type: String): boolean
# checkLocalVariable( in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label): boolean
# checkEnd( in className: String): boolean
# mutateAnnotationDefault( in mv: MethodVisitor, in className: String): AnnotationVisitor
# mutateAnnotation( in mv: MethodVisitor, in className: String, in desc: String, in visible: boolean): AnnotationVisitor
# mutateParameterAnnotation( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
# mutateAttribute( in mv: MethodVisitor, in className: String, in attr: Attribute)
# mutateCode( in mv: MethodVisitor, in className: String)
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# mutateIntInsn( in mv: MethodVisitor, in className: String, in opcode: int, in operand: int)
# mutateVarInsn( in mv: MethodVisitor, in className: String, in opcode: int, in var: int)
# mutateTypeInsn( in mv: MethodVisitor, in className: String, in opcode: int, in type: String)
# mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label)
# mutateLabel( in mv: MethodVisitor, in className: String, in label: Label)
# mutateLdcInsn( in mv: MethodVisitor, in className: String, in cst: Object)
# mutateLineInsn( in mv: MethodVisitor, in className: String, in var: int, in increment: int)
# mutateTableSwitchInsn( in mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label)
# mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)
# mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
# mutateTryCatchBlock( in mv: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label)
# mutateLocalVariable( in mv: MethodVisitor, in className: String, in name: String, in desc: String, in signature: String)
# mutateEnd( in mv: MethodVisitor, in className: String)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ getEnvironment( in environment: IEnvironment)

```

```

:ater

:ater
options: String): boolean

an

en
end: Label, in index: int): boolean

sitor
isible: boolean): AnnotationVisitor

in desc: String)
}, in desc: String, in itf: boolean)

els: Label)
I

I, in type: String)
string, in start: Label, in end: Label, in index: int)

```

```

# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkMethod( in className: String, in access: int, in
# checkInsn( in className: String, in opcode: int): boolean
# mutateInsn( in mv: MethodVisitor, in className: String)
# createCountingClassMutator(): AbstractClassMutator
# createClassMutator( in classWriter: ClassVisitor, in mut
# checkMethod( in className: String, in access: int, in
# checkAnnotationDefault( in className: String): boolean
# checkAnnotation( in className: String, in desc: String)
# checkParameterAnnotation( in className: String, in p
# checkAttribute( in className: String, in attr: Attribute)
# checkCode( in className: String): boolean
# checkInsn( in className: String, in opcode: int): boolean
# checkIntInsn( in className: String, in opcode: int, in
# checkVarInsn( in className: String, in opcode: int, in
# checkTypeInsn( in className: String, in opcode: int, i
# checkFieldInsn( in className: String, in opcode: int, i
# checkMethodInsn( in className: String, in opcode: int)
# checkJumpInsn( in className: String, in opcode: int,
# checkLabel( in className: String, in label: Label): boolean
# checkLdcInsn( in className: String, in cst: Object): boolean
# checkInclInsn( in className: String, in var: int, in incr
# checkTableSwitchInsn( in className: String, in min: int, in
# checkLookupSwitchInsn( in className: String, in dflt: int, in
# checkMultiANewArrayInsn( in className: String, in desc: String)
# checkTryCatchBlock( in className: String, in start: Label)
# checkLocalVariable( in className: String, in name: String)
# checkEnd( in className: String): boolean
# mutateAnnotationDefault( in mv: MethodVisitor, in className: String)
# mutateAnnotation( in mv: MethodVisitor, in className: String)
# mutateParameterAnnotation( in mv: MethodVisitor, in className: String)
# mutateAttribute( in mv: MethodVisitor, in className: String)
# mutateCode( in mv: MethodVisitor, in className: String)
# mutateInsn( in mv: MethodVisitor, in className: String)
# mutateIntInsn( in mv: MethodVisitor, in className: String)
# mutateVarInsn( in mv: MethodVisitor, in className: String)
# mutateTypeInsn( in mv: MethodVisitor, in className: String)
# mutateFieldInsn( in mv: MethodVisitor, in className: String)
# mutateMethodInsn( in mv: MethodVisitor, in className: String)
# mutateJumpInsn( in mv: MethodVisitor, in className: String)
# mutateLabel( in mv: MethodVisitor, in className: String)
# mutateLdcInsn( in mv: MethodVisitor, in className: String)
# mutateInclInsn( in mv: MethodVisitor, in className: String)
# mutateTableSwitchInsn( in mv: MethodVisitor, in className: String)
# mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String)
# mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String)
# mutateTryCatchBlock( in mv: MethodVisitor, in className: String)
# mutateLocalVariable( in mv: MethodVisitor, in className: String)
# mutateEnd( in mv: MethodVisitor, in className: String)
+ getMutationPoints( in bytecode: byte): IMutationPoint[]
+ mutate( in bytecode: byte, in mutationPointIndex: int)
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint)
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
- getDocumentation(): String

```

```
name: String, in desc: String, in signature: String, in exceptions: String): boolean
ian
g, in opcode: int)

tationPointIndex: int, in mutantIndex: int): AbstractClassMutater
name: String, in desc: String, in signature: String, in exceptions: String): boolean
n
, in visible: boolean): boolean
arameter: int, in desc: String, in visible: boolean): boolean
): boolean

ian
operand: int): boolean
var: int): boolean
in type: String): boolean
in owner: String, in name: String, in desc: String): boolean
t, in owner: String, in name: String, in desc: String): boolean
in label: Label): boolean
ean
olean
ement: int): boolean
t, in max: int, in dflt: Label, in labels: Label): boolean
Label, in keys: int, in labels: Label): boolean
esc: String, in dims: int): boolean
el, in end: Label, in handler: Label, in type: String): boolean
ing, in desc: String, in signature: String, in start: Label, in end: Label, in index: int): boolean

assName: String): AnnotationVisitor
ie: String, in desc: String, in visible: boolean): AnnotationVisitor
iclassName: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
String, in attr: Attribute)
ng)
g, in opcode: int)
ring, in opcode: int, in operand: int)
tring, in opcode: int, in var: int)
String, in opcode: int, in type: String)
String, in opcode: int, in owner: String, in name: String, in desc: String)
ne: String, in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)
: String, in opcode: int, in label: Label)
ng, in label: Label)
tring, in cst: Object)
tring, in var: int, in increment: int)
Name: String, in min: int, in max: int, in dflt: Label, in labels: Label)
ssName: String, in dflt: Label, in keys: int, in labels: Label)
className: String, in desc: String, in dims: int)
ame: String, in start: Label, in end: Label, in handler: Label, in type: String)
ime: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int)
g)

in mutantIndex: int): IMutantBytecode
nPoint): IMutantBytecode
```

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
# checkAnnotationDefault( in className: String): boolean
# checkAnnotation( in className: String, in desc: String, in visible: boolean): boolean
# checkParameterAnnotation( in className: String, in parameter: int, in desc: String, in visible: boolean): boolean
# checkAttribute( in className: String, in attr: Attribute): boolean
# checkCode( in className: String): boolean
# checkInsn( in className: String, in opcode: int): boolean
# checkIntInsn( in className: String, in opcode: int, in operand: int): boolean
# checkVarInsn( in className: String, in opcode: int, in var: int): boolean
# checkTypeInsn( in className: String, in opcode: int, in type: String): boolean
# checkFieldInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
# checkLabel( in className: String, in label: Label): boolean
# checkLdcInsn( in className: String, in cst: Object): boolean
# checkLincInsn( in className: String, in var: int, in increment: int): boolean
# checkTableSwitchInsn( in className: String, in min: int, in max: int, in dflt: Label, in labels: Label): boolean
# checkLookupSwitchInsn( in className: String, in dflt: Label, in keys: int, in labels: Label): boolean
# checkMultiANewArrayInsn( in className: String, in desc: String, in dims: int): boolean
# checkTryCatchBlock( in className: String, in start: Label, in end: Label, in handler: Label, in type: String): boolean
# checkLocalVariable( in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int): boolean
# checkEnd( in className: String): boolean
# mutateAnnotationDefault( in mv: MethodVisitor, in className: String): AnnotationVisitor
# mutateAnnotation( in mv: MethodVisitor, in className: String, in desc: String, in visible: boolean): AnnotationVisitor
# mutateParameterAnnotation( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
# mutateAttribute( in mv: MethodVisitor, in className: String, in attr: Attribute)
# mutateCode( in mv: MethodVisitor, in className: String)
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# mutateIntInsn( in mv: MethodVisitor, in className: String, in opcode: int, in operand: int)
# mutateVarInsn( in mv: MethodVisitor, in className: String, in opcode: int, in var: int)
# mutateTypeInsn( in mv: MethodVisitor, in className: String, in opcode: int, in type: String)
# mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label)
# mutateLabel( in mv: MethodVisitor, in className: String, in label: Label)
# mutateLdcInsn( in mv: MethodVisitor, in className: String, in cst: Object)
# mutateLincInsn( in mv: MethodVisitor, in className: String, in var: int, in increment: int)
# mutateTableSwitchInsn( in mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label)
# mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)
# mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
# mutateTryCatchBlock( in mv: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label, in type: String)
# mutateLocalVariable( in mv: MethodVisitor, in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label)
# mutateEnd( in mv: MethodVisitor, in className: String)

+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment( in environment: IEnvironment)
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d: Label, in index: int)

INIT: String [1]
CLINIT: String [1]
JAVA: String [1]
THIS: String [1]

+ getDescription(): String
+ checkInsn(in className: String, in opcode: int): boolean
+ mutateInsn(in mv: MethodVisitor, in className: String, in opcode: int)
+ createCountingClassMutater(): AbstractClassMutater
+ createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutant)
+ checkMethod(in className: String, in access: int, in name: String, in desc: String, i
+ checkAnnotationDefault(in className: String): boolean
+ checkAnnotation(in className: String, in desc: String, in visible: boolean): boolean
+ checkParameterAnnotation(in className: String, in parameter: int, in desc: String, i
+ checkAttribute(in className: String, in attr: Attribute): boolean
+ checkCode(in className: String): boolean
+ checkInsn(in className: String, in opcode: int): boolean
+ checkIntInsn(in className: String, in opcode: int, in operand: int): boolean
+ checkVarInsn(in className: String, in opcode: int, in var: int): boolean
+ checkTypeInsn(in className: String, in opcode: int, in type: String): boolean
+ checkFieldInsn(in className: String, in opcode: int, in owner: String, in name: String
+ checkMethodInsn(in className: String, in opcode: int, in owner: String, in name: St
+ checkJumpInsn(in className: String, in opcode: int, in label: Label): boolean
+ checkLabel(in className: String, in label: Label): boolean
+ checkLdcInsn(in className: String, in cst: Object): boolean
+ checkInclInsn(in className: String, in var: int, in increment: int): boolean
+ checkTableSwitchInsn(in className: String, in min: int, in max: int, in dflt: Label, in
+ checkLookupSwitchInsn(in className: String, in dflt: Label, in keys: int, in labels: La
+ checkMultiANewArrayInsn(in className: String, in desc: String, in dims: int): boolean
+ checkTryCatchBlock(in className: String, in start: Label, in end: Label, in handler: La
+ checkLocalVariable(in className: String, in name: String, in desc: String, in signatur
+ checkEnd(in className: String): boolean
+ mutateAnnotationDefault(in mv: MethodVisitor, in className: String): AnnotationVisi
+ mutateAnnotation(in mv: MethodVisitor, in className: String, in desc: String, in vis
+ mutateParameterAnnotation(in mv: MethodVisitor, in className: String, in paramet
+ mutateAttribute(in mv: MethodVisitor, in className: String, in attr: Attribute)
+ mutateCode(in mv: MethodVisitor, in className: String)
+ mutateInsn(in mv: MethodVisitor, in className: String, in opcode: int)
+ mutateIntInsn(in mv: MethodVisitor, in className: String, in opcode: int, in operan
+ mutateVarInsn(in mv: MethodVisitor, in className: String, in opcode: int, in var: int
+ mutateTypeInsn(in mv: MethodVisitor, in className: String, in opcode: int, in type:
+ mutateFieldInsn(in mv: MethodVisitor, in className: String, in opcode: int, in own
+ mutateMethodInsn(in mv: MethodVisitor, in className: String, in opcode: int, in ov
+ mutateJumpInsn(in mv: MethodVisitor, in className: String, in opcode: int, in label
+ mutateLabel(in mv: MethodVisitor, in className: String, in label: Label)
+ mutateLdcInsn(in mv: MethodVisitor, in className: String, in cst: Object)
+ mutateInclInsn(in mv: MethodVisitor, in className: String, in var: int, in increment:
+ mutateTableSwitchInsn(in mv: MethodVisitor, in className: String, in min: int, in m
+ mutateLookupSwitchInsn(in mv: MethodVisitor, in className: String, in dflt: Label,
+ mutateMultiANewArrayInsn(in mv: MethodVisitor, in className: String, in desc: Stri
+ mutateTryCatchBlock(in mv: MethodVisitor, in className: String, in start: Label, in e
+ mutateLocalVariable(in mv: MethodVisitor, in className: String, in name: String, in
+ mutateEnd(in mv: MethodVisitor, in className: String)
+ getMutationPoints(in bytecode: byte): IMutationPoint
+ mutate(in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantB
+ mutate(in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
getReaderFlags(): int
getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment(in environment: IEnvironment)

anityCheck

Index: int): AbstractClassMutater

n signature: String, in exceptions: String): boolean

n visible: boolean): boolean

), in desc: String): boolean

ring, in desc: String): boolean

labels: Label): boolean

bel): boolean

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abel, in type: String): boolean

e: String, in start: Label, in end: Label, in index: int): boolean

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ible: boolean): AnnotationVisitor

er: int, in desc: String, in visible: boolean): AnnotationVisitor

d: int)

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String)

er: String, in name: String, in desc: String)

wner: String, in name: String, in desc: String, in itf: boolean)

l: Label)

int)

ax: int, in dflt: Label, in labels: Label)

in keys: int, in labels: Label)

ng, in dims: int)

end: Label, in handler: Label, in type: String)

desc: String, in signature: String, in start: Label, in end: Label, in index: int)

ytecode

INIT: String [1]
CLINIT: String [1]
JAVA: String [1]
THIS: String [1]

+ getDescription(): String
checkInsn(in className: S
mutateInsn(in mv: Method
createCountingClassMutate
createClassMutater(in clas
checkMethod(in className:
checkAnnotationDefault(ir
checkAnnotation(in classN
checkParameterAnnotation
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checkCode(in className:
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checkVarInsn(in className:
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checkMethodInsn(in classNa
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checkLdcInsn(in className:
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mutateAnnotationDefault(
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mutateCode(in mv: Method
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mutateIntInsn(in mv: Meth
mutateVarInsn(in mv: Met
mutateTypeInsn(in mv: Me
mutateFieldInsn(in mv: Me
mutateMethodInsn(in mv: Me
mutateJumpInsn(in mv: M
mutateLabel(in mv: Method
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mutateTableSwitchInsn(in
mutateLookupSwitchInsn(in
mutateMultiANewArrayInsn(
mutateTryCatchBlock(in m
mutateLocalVariable(in mv
mutateEnd(in mv: Method
+ getMutationPoints(in byte
+ mutate(in bytecode: byte,
+ mutate(in bytecode: byte,
getReaderFlags(): int
getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment(in environ

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tring, in opcode: int): boolean
IVisitor, in className: String, in opcode: int)
er(): AbstractClassMutater
sWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
ie: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
n className: String): boolean
lame: String, in desc: String, in visible: boolean): boolean
( in className: String, in parameter: int, in desc: String, in visible: boolean): boolean
ne: String, in attr: Attribute): boolean
String): boolean
tring, in opcode: int): boolean
:: String, in opcode: int, in operand: int): boolean
e: String, in opcode: int, in var: int): boolean
ne: String, in opcode: int, in type: String): boolean
ne: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
Name: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
me: String, in opcode: int, in label: Label): boolean
String, in label: Label): boolean
e: String, in cst: Object): boolean
e: String, in var: int, in increment: int): boolean
lassName: String, in min: int, in max: int, in dflt: Label, in labels: Label): boolean
iclassName: String, in dflt: Label, in keys: int, in labels: Label): boolean
in className: String, in desc: String, in dims: int): boolean
sName: String, in start: Label, in end: Label, in handler: Label, in type: String): boolean
sName: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int): boolean
tring): boolean
in mv: MethodVisitor, in className: String): AnnotationVisitor
MethodVisitor, in className: String, in desc: String, in visible: boolean): AnnotationVisitor
in( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
ethodVisitor, in className: String, in attr: Attribute)
odVisitor, in className: String)
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MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)
ethodVisitor, in className: String, in opcode: int, in label: Label)
odVisitor, in className: String, in label: Label)
odVisitor, in className: String, in cst: Object)
odVisitor, in className: String, in var: int, in increment: int)
mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label)
in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)
in( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
v: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label, in type: String)
v: MethodVisitor, in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int)
IVisitor, in className: String)
code: byte): IMutationPoint
in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
in mutationPoint: IMutationPoint): IMutantBytecode
```

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    # INIT: String [1]
    # CLINIT: String [1]
    # JAVA: String [1]
    # THIS: String [1]

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    + getDescription(): String
    # checkInsn( in className: String, in opcode: int): boolean
    # mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
    # createCountingClassMutater(): AbstractClassMutater
    # createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
    # checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exception: String): boolean
    # checkAnnotationDefault( in className: String): boolean
    # checkAnnotation( in className: String, in desc: String, in visible: boolean): boolean
    # checkParameterAnnotation( in className: String, in parameter: int, in desc: String, in visible: boolean): boolean
    # checkAttribute( in className: String, in attr: Attribute): boolean
    # checkCode( in className: String): boolean
    # checkInsn( in className: String, in opcode: int): boolean
    # checkIntInsn( in className: String, in opcode: int, in operand: int): boolean
    # checkVarInsn( in className: String, in opcode: int, in var: int): boolean
    # checkTypeInsn( in className: String, in opcode: int, in type: String): boolean
    # checkFieldInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
    # checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
    # checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
    # checkLabel( in className: String, in label: Label): boolean
    # checkLdInsn( in className: String, in cst: Object): boolean
    # checkLincInsn( in className: String, in var: int, in increment: int): boolean
    # checkTableSwitchInsn( in className: String, in min: int, in max: int, in dflt: Label, in labels: Label): boolean
    # checkLookupSwitchInsn( in className: String, in dflt: Label, in keys: int, in labels: Label): boolean
    # checkMultiANewArrayInsn( in className: String, in desc: String, in dims: int): boolean
    # checkTryCatchBlock( in className: String, in start: Label, in end: Label, in handler: Label, in type: String): boolean
    # checkLocalVariable( in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label): boolean
    # checkEnd( in className: String): boolean
    # mutateAnnotationDefault( in mv: MethodVisitor, in className: String): AnnotationVisitor
    # mutateAnnotation( in mv: MethodVisitor, in className: String, in desc: String, in visible: boolean): AnnotationVisitor
    # mutateParameterAnnotation( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
    # mutateAttribute( in mv: MethodVisitor, in className: String, in attr: Attribute)
    # mutateCode( in mv: MethodVisitor, in className: String)
    # mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
    # mutateIntInsn( in mv: MethodVisitor, in className: String, in opcode: int, in operand: int)
    # mutateVarInsn( in mv: MethodVisitor, in className: String, in opcode: int, in var: int)
    # mutateTypeInsn( in mv: MethodVisitor, in className: String, in opcode: int, in type: String)
    # mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
    # mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
    # mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label)
    # mutateLabel( in mv: MethodVisitor, in className: String, in label: Label)
    # mutateLdInsn( in mv: MethodVisitor, in className: String, in cst: Object)
    # mutateLincInsn( in mv: MethodVisitor, in className: String, in var: int, in increment: int)
    # mutateTableSwitchInsn( in mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label)
    # mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)
    # mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
    # mutateTryCatchBlock( in mv: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label)
    # mutateLocalVariable( in mv: MethodVisitor, in className: String, in name: String, in desc: String, in signature: String)
    # mutateEnd( in mv: MethodVisitor, in className: String)
    + getMutationPoints( in bytecode: byte): IMutationPoint
    + mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
    + mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
    # getReaderFlags(): int
    # getWriterFlags(): int
    + getName(): String
    + getDescription(): String
    + getEnvironment( in environments: IEnvironment)

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tater
options: String): boolean

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an
end: Label, in index: int): boolean

visitor
isible: boolean): AnnotationVisitor

in desc: String)
g, in desc: String, in ift: boolean)

odels: Label)
)

l, in type: String)
String, in start: Label, in end: Label, in index: int)

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# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkInsn( in className: String, in opcode: int): boolean
# mutateInsn( in mv: MethodVisitor, in className: String)
# createCountingClassMutator(): AbstractClassMutator
# createClassMutator( in classWriter: ClassVisitor, in mu
# checkMethod( in className: String, in access: int, in
# checkAnnotationDefault( in className: String): boolean
# checkAnnotation( in className: String, in desc: String)
# checkParameterAnnotation( in className: String, in p
# checkAttribute( in className: String, in attr: Attribute)
# checkCode( in className: String): boolean
# checkInsn( in className: String, in opcode: int): boolean
# checkIntInsn( in className: String, in opcode: int, in
# checkVarInsn( in className: String, in opcode: int, in
# checkTypeInsn( in className: String, in opcode: int)
# checkFieldInsn( in className: String, in opcode: int,
# checkMethodInsn( in className: String, in opcode: int)
# checkJumpInsn( in className: String, in opcode: int)
# checkLabel( in className: String, in label: Label): bo
# checkLdcInsn( in className: String, in cst: Object): bo
# checkLineInsn( in className: String, in var: int, in inc
# checkTableSwitchInsn( in className: String, in min: in
# checkLookupSwitchInsn( in className: String, in dflt: i
# checkMultiANewArrayInsn( in className: String, in de
# checkTryCatchBlock( in className: String, in start: La
# checkLocalVariable( in className: String, in name: Stri
# checkEnd( in className: String): boolean
# mutateAnnotationDefault( in mv: MethodVisitor, in cl
# mutateAnnotation( in mv: MethodVisitor, in className: S
# mutateParameterAnnotation( in mv: MethodVisitor, ir
# mutateAttribute( in mv: MethodVisitor, in className: S
# mutateCode( in mv: MethodVisitor, in className: Stri
# mutateInsn( in mv: MethodVisitor, in className: String)
# mutateIntInsn( in mv: MethodVisitor, in className: St
# mutateVarInsn( in mv: MethodVisitor, in className: S
# mutateTypeInsn( in mv: MethodVisitor, in className: S
# mutateFieldInsn( in mv: MethodVisitor, in className: S
# mutateMethodInsn( in mv: MethodVisitor, in className: S
# mutateJumpInsn( in mv: MethodVisitor, in className: S
# mutateLabel( in mv: MethodVisitor, in className: Stri
# mutateLdcInsn( in mv: MethodVisitor, in className: S
# mutateLineInsn( in mv: MethodVisitor, in className: S
# mutateTableSwitchInsn( in mv: MethodVisitor, in class
# mutateLookupSwitchInsn( in mv: MethodVisitor, in class
# mutateMultiANewArrayInsn( in mv: MethodVisitor, in de
# mutateTryCatchBlock( in mv: MethodVisitor, in classN
# mutateLocalVariable( in mv: MethodVisitor, in classNa
# mutateEnd( in mv: MethodVisitor, in className: String)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int)
+ mutate( in bytecode: byte, in mutationPoint: IMutatio
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ getEnvironment( in environment: IEnvironment)
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>an
ig, in opcode: int)

tationPointIndex: int, in mutantIndex: int): AbstractClassMutater
name: String, in desc: String, in signature: String, in exceptions: String): boolean
n
l, in visible: boolean): boolean
parameter: int, in desc: String, in visible: boolean): boolean
): boolean

>an
operand: int): boolean
var: int): boolean
in type: String): boolean
in owner: String, in name: String, in desc: String): boolean
t, in owner: String, in name: String, in desc: String): boolean
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lean
olean
ement: int): boolean
t, in max: int, in dflt: Label, in labels: Label): boolean
Label, in keys: int, in labels: Label): boolean
esc: String, in dims: int): boolean
el, in end: Label, in handler: Label, in type: String): boolean
ing, in desc: String, in signature: String, in start: Label, in end: Label, in index: int): boolean

assName: String): AnnotationVisitor
e: String, in desc: String, in visible: boolean): AnnotationVisitor
className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
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ig, in opcode: int)
ring, in opcode: int, in operand: int)
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String, in opcode: int, in type: String)
String, in opcode: int, in owner: String, in name: String, in desc: String)
ne: String, in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)
: String, in opcode: int, in label: Label)
ng, in label: Label)
string, in cst: Object)
String, in var: int, in increment: int)
Name: String, in min: int, in max: int, in dflt: Label, in labels: Label)
assName: String, in dflt: Label, in keys: int, in labels: Label)
className: String, in desc: String, in dims: int)
ame: String, in start: Label, in end: Label, in handler: Label, in type: String)
ime: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int)
g)

, in mutantIndex: int): IMutantBytecode
inPoint): IMutantBytecode
```

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkInsn( in className: String, in opcode: int): boolean
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
# checkAnnotationDefault( in className: String): boolean
# checkAnnotation( in className: String, in desc: String, in visible: boolean): boolean
# checkParameterAnnotation( in className: String, in parameter: int, in desc: String, in visible: boolean): boolean
# checkAttribute( in className: String, in attr: Attribute): boolean
# checkCode( in className: String): boolean
# checkInsn( in className: String, in opcode: int): boolean
# checkIntInsn( in className: String, in opcode: int, in operand: int): boolean
# checkVarInsn( in className: String, in opcode: int, in var: int): boolean
# checkTypeInsn( in className: String, in opcode: int, in type: String): boolean
# checkFieldInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
# checkLabel( in className: String, in label: Label): boolean
# checkLdcInsn( in className: String, in cst: Object): boolean
# checkIncInsn( in className: String, in var: int, in increment: int): boolean
# checkTableSwitchInsn( in className: String, in min: int, in max: int, in dflt: Label, in labels: Label): boolean
# checkLookupSwitchInsn( in className: String, in dflt: Label, in keys: int, in labels: Label): boolean
# checkMultiANewArrayInsn( in className: String, in desc: String, in dims: int): boolean
# checkTryCatchBlock( in className: String, in start: Label, in end: Label, in handler: Label, in type: String): boolean
# checkLocalVariable( in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int): boolean
# checkEnd( in className: String): boolean
# mutateAnnotationDefault( in mv: MethodVisitor, in className: String): AnnotationVisitor
# mutateAnnotation( in mv: MethodVisitor, in className: String, in desc: String, in visible: boolean): AnnotationVisitor
# mutateParameterAnnotation( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
# mutateAttribute( in mv: MethodVisitor, in className: String, in attr: Attribute)
# mutateCode( in mv: MethodVisitor, in className: String)
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# mutateIntInsn( in mv: MethodVisitor, in className: String, in opcode: int, in operand: int)
# mutateVarInsn( in mv: MethodVisitor, in className: String, in opcode: int, in var: int)
# mutateTypeInsn( in mv: MethodVisitor, in className: String, in opcode: int, in type: String)
# mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label)
# mutateLabel( in mv: MethodVisitor, in className: String, in label: Label)
# mutateLdcInsn( in mv: MethodVisitor, in className: String, in cst: Object)
# mutateIncInsn( in mv: MethodVisitor, in className: String, in var: int, in increment: int)
# mutateTableSwitchInsn( in mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label)
# mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)
# mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
# mutateTryCatchBlock( in mv: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label, in type: String)
# mutateLocalVariable( in mv: MethodVisitor, in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label)
# mutateEnd( in mv: MethodVisitor, in className: String)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ getEnvironment( in environment: IEnvironment)
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id: Label, in index: int)

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# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkInsn( in className: String, in opcode: int): boolean
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutant)
# checkMethod( in className: String, in access: int, in name: String, in desc: String, i)
# checkAnnotationDefault( in className: String): boolean
# checkAnnotation( in className: String, in desc: String, in visible: boolean): boolean
# checkParameterAnnotation( in className: String, in parameter: int, in desc: String, i)
# checkAttribute( in className: String, in attr: Attribute): boolean
# checkCode( in className: String): boolean
# checkInsn( in className: String, in opcode: int): boolean
# checkIntInsn( in className: String, in opcode: int, in operand: int): boolean
# checkVarInsn( in className: String, in opcode: int, in var: int): boolean
# checkTypeInsn( in className: String, in opcode: int, in type: String): boolean
# checkFieldInsn( in className: String, in opcode: int, in owner: String, in name: String)
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String)
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean
# checkLabel( in className: String, in label: Label): boolean
# checkLdcInsn( in className: String, in cst: Object): boolean
# checkLineInsn( in className: String, in var: int, in increment: int): boolean
# checkTableSwitchInsn( in className: String, in min: int, in max: int, in dflt: Label, in)
# checkLookupSwitchInsn( in className: String, in dflt: Label, in keys: int, in labels: La)
# checkMultiANewArrayInsn( in className: String, in desc: String, in dims: int): boolean
# checkTryCatchBlock( in className: String, in start: Label, in end: Label, in handler: Li)
# checkLocalVariable( in className: String, in name: String, in desc: String, in signature)
# checkEnd( in className: String): boolean
# mutateAnnotationDefault( in mv: MethodVisitor, in className: String): AnnotationVis
# mutateAnnotation( in mv: MethodVisitor, in className: String, in desc: String, in vis)
# mutateParameterAnnotation( in mv: MethodVisitor, in className: String, in paramet)
# mutateAttribute( in mv: MethodVisitor, in className: String, in attr: Attribute)
# mutateCode( in mv: MethodVisitor, in className: String)
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)
# mutateIntInsn( in mv: MethodVisitor, in className: String, in opcode: int, in operan)
# mutateVarInsn( in mv: MethodVisitor, in className: String, in opcode: int, in var: int)
# mutateTypeInsn( in mv: MethodVisitor, in className: String, in opcode: int, in type: String)
# mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String)
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String)
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label)
# mutateLabel( in mv: MethodVisitor, in className: String, in label: Label)
# mutateLdcInsn( in mv: MethodVisitor, in className: String, in cst: Object)
# mutateLineInsn( in mv: MethodVisitor, in className: String, in var: int, in increment: int)
# mutateTableSwitchInsn( in mv: MethodVisitor, in className: String, in min: int, in max: int, in d)
# mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)
# mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)
# mutateTryCatchBlock( in mv: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label)
# mutateLocalVariable( in mv: MethodVisitor, in className: String, in name: String, in desc: String, in signature)
# mutateEnd( in mv: MethodVisitor, in className: String)
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantB
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment( in environment: IEnvironment)
```

SIR_Sh1

```
:Index: int): AbstractClassMutater
n signature: String, in exceptions: String): boolean

in visible: boolean): boolean

g, in desc: String): boolean
ring, in desc: String): boolean

labels: Label): boolean
bel): boolean

abel, in type: String): boolean
re: String, in start: Label, in end: Label, in index: int): boolean

itor
ible: boolean): AnnotationVisitor
er: int, in desc: String, in visible: boolean): AnnotationVisitor

d: int)
:)
String)
er: String, in name: String, in desc: String)
wner: String, in name: String, in desc: String, in itf: boolean)
l: Label)

int)
ax: int, in dflt: Label, in labels: Label)
in keys: int, in labels: Label)
ng, in dims: int)
end: Label, in handler: Label, in type: String)
desc: String, in signature: String, in start: Label, in end: Label, in index: int)
```

bytecode

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]
```

```
+ getDescription(): String
# checkVariable( in variable:
# checkMethod( in classNam
# checkVariable( in variable:
# getType( in variable: Local
# getSuperType( in variable:
# hasSuperType( in varType:
# isMethodArgument( in mn
# createCountingClassMutate
# createClassMutater( in clas
+ getMutationPoints( in byte
+ mutate( in bytecode: byte,
+ mutate( in bytecode: byte,
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment( in environ
# getEnvironment(): IEnviron
+ toString(): String
# createCountingClassMutate
# createClassMutater( in clas.
```

```
getDescription
checkVariable
checkMethod
getType
getSuperType
hasSuperType
isMethodArgument
createCountingClassMutate
createClassMutater
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
toString
verify
trace
trace
```



```
LocalVariableNode, in mn: MethodNode, in i: int, in className: String): boolean
    e: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
LocalVariableNode, in mn: MethodNode, in i: int, in className: String): boolean
VariableNode): String
LocalVariableNode): String
String, in varSuperType: String): boolean
: MethodNode, in className: String, in i: int): boolean
er(): AbstractClassMutater
sWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
eCode: byte): IMutationPoint
    in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
    in mutationPoint: IMutationPoint): IMutantBytecode

nment: IEnvironment)
ment

r(): AbstractClassMutater
sWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
```

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkVariable( in variable: LocalVariableNode, in mn: MethodNode, in i: int, in className: String): boolean
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
# checkVariable( in variable: LocalVariableNode, in mn: MethodNode, in i: int, in className: String): boolean
# getType( in variable: LocalVariableNode): String
# getSuperType( in variable: LocalVariableNode): String
# hasSuperType( in varType: String, in varSuperType: String): boolean
# isMethodArgument( in mn: MethodNode, in className: String, in i: int): boolean
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment( in environment: IEnvironment)
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
```

```
getDescription
checkVariable
checkMethod
getType
getSuperType
hasSuperType
isMethodArgument
createCountingClassMutater
createClassMutater
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
toString
verify
trace
trace
```

 - serialVersionUID: long [1]

```
«Create» + UpFrontHomMutationWork( in clientId: long, in retries: int, in resultFormatter: MutationResultFormatter, in targetClass: String)
  - generateAndEvaluateFoms(): IMutant
  # createExecutor(): Executor
  «Create» + HomMutationWork( in clientId: long, in retries: int, in resultFormatter: MutationResultFormatter, in targetClass: String)
    + run( in workspace: Object): IClassMutationResult
    # createHomFactory(): HomFactory
    # createDataCollector(): IHomDataCollector
    # getObjectives(): ObjectiveCalculator
    # getExecutor( in maxEvaluations: int): Executor
    # getFilter(): IMutantFilter
    # getMaxMutationOrder(): int
    # createExecutor(): Executor
  «Create» + MutationWork( in clientId: long, in retries: int, in resultFormatter: MutationResultFormatter, in targetClass: String)
    + run( in workspace: Object): IClassMutationResult
    # collectSummaryData(): MutationSummary
    # computeInitialTestsDuration()
    # init( in workspace: String)
    # initReset()
    # mutate(): IMutant
    # getBytecode(): byte
    # generateFoms( in bytecode: byte): IMutant
    # getEvaluator(): IMutantEvaluator
    + getStatistic(): IDurationStatistic
    + setStatistic( in statistic: IDurationStatistic)
    + getKind(): ClassKind
    + setKind( in kind: ClassKind)
    + getTargetClass(): ITargeClass
    + getOperators(): IMutationOperator
    + setOperators( in operators: IMutationOperator)
    + getCache(): IBytecodeCache
    + setCache( in cache: IBytecodeCache)
    + getResultFormatter(): MutationResultFormatter
    + setResultFormatter( in resultFormatter: MutationResultFormatter)
    + getSerialVersionUID(): long
    + getClasspath(): String
    + getEnvFactory(): IEnvironmentFactory
    + getTesterFactory(): ITesterFactory
    + getOperatorsFactory(): IMutationOperatorsFactory
    + getMaxInfiniteLoopGuardTimeout(): long
    + getTester(): ITester
    + setTester( in tester: ITeser)
    + setEvaluator( in evaluator: IMutantEvaluator)
    + getLOGGER(): Logger
    + getWorkspace(): String
  «Create» + AbstractWork( in clientId: long, in retries: int)
  + getClientId(): long
  «Synchronized» + canRetry(): boolean
  + getRetries(): int
  + getSerialVersionUID(): long
  + getClientId()
  + getClientId( in null: <Undefined>)
  + run()
  + run( in null: <Undefined>)
  + run(): IClassMutationResult
  + run( in null: <Undefined>): IClassMutationResult
  + run( in param: <Undefined>): IClassMutationResult
  + run( in param: Object): IClassMutationResult
  + canRetry()
  + canRetry( in null: <Undefined>)
```

 UpFrontHomMutationWork

n targetClass: ITargetClass, in classpath: String, in testerFactory: ITesterFactory, in envFactory: IEnvironmentFactory, in operatorsFactory: IMutatio

Class: ITargetClass, in classpath: String, in testerFactory: ITesterFactory, in envFactory: IEnvironmentFactory, in operatorsFactory: IMutationOperat

: ITargetClass, in classpath: String, in testerFactory: ITesterFactory, in envFactory: IEnvironmentFactory, in operatorsFactory: IMutationOperatorsFa

nOperatorsFactory, in infiniteLoopBreakTime: long, in config: HomConfig, in filter: IMutantFilter)

orsFactory, in maxInfiniteLoopGuardTimeout: long, in config: HomConfig, in filter: IMutantFilter)

actory, in maxInfiniteLoopGuardTimeout: long)

- serialVersionUID: long [1]

```
«Create» + OnTheFlyHomMutationWork( in clientId: long, in retries: int, in resultFormatter: MutationResultFormatter, in targetC
 - createFomFactory( in bytecode: byte): FomFactory
 # createExecutor(): Executor
 «Create» + HomMutationWork( in clientId: long, in retries: int, in resultFormatter: MutationResultFormatter, in targetClass: ITarg
 + run( in workspace: Object): IClassMutationResult
 # createHomFactory(): HomFactory
 # createDataCollector(): IHomDataCollector
 # getObjectives(): ObjectiveCalculator
 # getExecutor( in maxEvaluations: int): Executor
 # getFilter(): IMutantFilter
 # getMaxMutationOrder(): int
 # createExecutor(): Executor
 «Create» + MutationWork( in clientId: long, in retries: int, in resultFormatter: MutationResultFormatter, in targetClass: ITarge
 + run( in workspace: Object): IClassMutationResult
 # collectSummaryData(): MutationSummary
 # computeInitialTestsDuration()
 # init( in workspace: String)
 # initReset()
 # mutate(): IMutant
 # getBytocode(): byte
 # generateFoms( in bytecode: byte): IMutant
 # getEvaluator(): IMutantEvaluator
 + getStatistic(): IDurationStatistic
 + setStatistic( in statistic: IDurationStatistic)
 + getKind(): ClassKind
 + setKind( in kind: ClassKind)
 + getTargetClass(): ITarge
 + getOperators(): IMutationOperator
 + setOperators( in operators: IMutationOperator)
 + getCache(): IBytecodeCache
 + setCache( in cache: IBytecodeCache)
 + getResultFormatter(): MutationResultFormatter
 + setResultFormatter( in resultFormatter: MutationResultFormatter)
 + getSerialVersionUID(): long
 + getClasspath(): String
 + getEnvFactory(): IEnvironmentFactory
 + getTesterFactory(): ITesterFactory
 + getOperatorsFactory(): IMutationOperatorsFactory
 + getMaxInfiniteLoopGuardTimeout(): long
 + getTester(): ITester
 + setTester( in tester: ITester)
 + setEvaluator( in evaluator: IMutantEvaluator)
 + getLOGGER(): Logger
 + getWorkspace(): String
 «Create» + AbstractWork( in clientId: long, in retries: int)
 + getClientId(): long
 «Synchronized» + canRetry(): boolean
 + getRetries(): int
 + getSerialVersionUID(): long
 + getClientId()
 + getClientId( in null: <Undefined>)
 + run()
 + run( in null: <Undefined>)
 + run(): IClassMutationResult
 + run( in null: <Undefined>): IClassMutationResult
 + run( in param: <Undefined>): IClassMutationResult
 + run( in param: Object): IClassMutationResult
 + canRetry()
 + canRetry( in null: <Undefined>)
```

lass: ITargetClass, in classpath: String, in testerFactory: ITesterFactory, in envFactory: IEnvironmentFactory, in operatorsFactory: IMutationOperato

etClass, in classpath: String, in testerFactory: ITesterFactory, in envFactory: IEnvironmentFactory, in operatorsFactory: IMutationOperatorsFactory,

ss, in classpath: String, in testerFactory: ITesterFactory, in envFactory: IEnvironmentFactory, in operatorsFactory: IMutationOperatorsFactory, in r

```
rsFactory, in infiniteLoopBreakTime: long, in config: HomConfig, in filter: IMutantFilter)
```

```
in maxInfiniteLoopGuardTimeout: long, in config: HomConfig, in filter: IMutantFilter)
```

```
maxInfiniteLoopGuardTimeout: long)
```

 - serialVersionUID: long [1]

```
«Create» + NotEquivalentHomMutationWork( in clientId: long, in retries: int, in resultFormatter: MutationResultFormatter, in targetClass: ITargetClass)
+ createFomFactory( in bytecode: byte): FomFactory
# createExecutor(): Executor
«Create» + HomMutationWork( in clientId: long, in retries: int, in resultFormatter: MutationResultFormatter, in targetClass: ITargetClass)
+ run( in workspace: Object): IClassMutationResult
# createHomFactory(): HomFactory
# createDataCollector(): IHomDataCollector
# getObjectives(): ObjectiveCalculator
# getExecutor( in maxEvaluations: int): Executor
# getFilter(): IMutantFilter
# getMaxMutationOrder(): int
# createExecutor(): Executor
«Create» + MutationWork( in clientId: long, in retries: int, in resultFormatter: MutationResultFormatter, in targetClass: ITargetClass, in workspace: Object)
+ run( in workspace: Object): IClassMutationResult
# collectSummaryData(): MutationSummary
# computeInitialTestsDuration()
# init( in workspace: String)
# initReset()
# mutate(): IMutant
# getBytocode(): byte
# generateFoms( in bytecode: byte): IMutant
# getEvaluator(): IMutantEvaluator
+ getStatistic(): IDurationStatistic
+ setStatistic( in statistic: IDurationStatistic)
+ getKind(): ClassKind
+ setKind( in kind: ClassKind)
+ getTargetClass(): ITargetClass
+ getOperators(): IMutationOperator
+ setOperators( in operators: IMutationOperator)
+ getCache(): IBytecodeCache
+ setCache( in cache: IBytecodeCache)
+ getResultFormatter(): MutationResultFormatter
+ setResultFormatter( in resultFormatter: MutationResultFormatter)
+ getSerialVersionUID(): long
+ getClasspath(): String
+ getEnvFactory(): IEnvironmentFactory
+ getTesterFactory(): ITesterFactory
+ getOperatorsFactory(): IMutationOperatorsFactory
+ getMaxInfiniteLoopGuardTimeout(): long
+ getTester(): ITester
+ setTester( in tester: ITes
```



NotEquivalentHomMutationWork

ss: ITargetClass, in classpath: String, in testerFactory: ITesterFactory, in envFactory: IEnvironmentFactory, in operatorsFactory: IMutationOperators

, in classpath: String, in testerFactory: ITesterFactory, in envFactory: IEnvironmentFactory, in operatorsFactory: IMutationOperatorsFactory, in maxInfi

classpath: String, in testerFactory: ITesterFactory, in envFactory: IEnvironmentFactory, in operatorsFactory: IMutationOperatorsFactory, in maxInfi

Factory, in infiniteLoopBreakTime: long, in config: HomConfig, in filter: IMutantFilter)

exInfiniteLoopGuardTimeout: long, in config: HomConfig, in filter: IMutantFilter)

niteLoopGuardTimeout: long)

 ClassMutationResultPart

- serialVersionUID: long [1]
- aliveMutants: IMutant [*]
- killedMutants: IMutant [*]
- killedCount: int [1]
- count: int [1]

«Create» + ClassMutationResultPart(in aliveCount: int, in killedCount: int)
«Create» + ClassMutationResultPart(in aliveCount: int, in aliveMutants: IMutant, in killedCount: int, in killedMutants: IMutant)
+ getAliveMutants(): IMutant
+ getKilledMutants(): IMutant
+ getKilledMutantsCount(): int
+ getMutantsCount(): int

ClassMutationResultPart
ClassMutationResultPart
getAliveMutants
getKilledMutants
getKilledMutantsCount
getMutantsCount

 EmptyMutationClient

- LOGGER: Logger [1]

```
«Create» + EmptyMutationClient( in testRun: IInitialTestsRun, in operators: IDescribable)
  + compute(): IMutationResult
«Create» + MutationClient( in testRun: IInitialTestsRun, in targetClasses: String, in operators: IDescribable, in workFactory: IWorkFactory)
  # createMutationResult( in client: IQueueClient): IMutationResult
  # createResult( in timer: Timer, in tests: IInitialTestsRun, in results: IClassMutationResult): IMutationResult
  + getTestRun(): IInitialTestsRun
  + getWorkProgressObserver(): Observer
```

```
EmptyMutationClient
compute
MutationClient
createMutationResult
compute
createTargetClass
createMutationResults
createMutationWork
createResult
getTestRun
getWorkProgressObserver
```

MutationWorkFactory, in workProgressObserver: Observer)

«Create» + DistributedMutationClient(in test
+ compute(): IMutationResult
createQueueClient(): IQueueClient
createConnector(): CajoConnector
«Create» + MutationClient(in testRun: IInitialTestsRun
createMutationResult(in client: IQueueClient
createResult(in timer: Timer, in tests: IInitialTestsRun
+ getTestRun(): IInitialTestsRun
+ getWorkProgressObserver(): Observer

DistributedMutationClient
compute
createQueueClient
createConnector
MutationClient
createMutationResult
compute
createTargetClass
createMutationResults
createMutationWork
createResult
getTestRun
getWorkProgressObserver



DistributedMutationClient

:Run: IInitialTestsRun, in targetClasses: String, in operators: IDescribable, in workFactory: IMutationWorkFactory, in workProgressObserver: Observer

|TestsRun, in targetClasses: String, in operators: IDescribable, in workFactory: IMutationWorkFactory, in workProgressObserver: Observer)

|nt): IMutationResult

alTestsRun, in results: IClassMutationResult): IMutationResult

ver)

```
- MIN_QUEUE_SIZE: int [1]
- workspace: String [1]
- threadCount: int [1]

«Create» + LocalMutationClient( in testRun: IInitialTestsRun, in targetClasses: String, in operators: IDescriber)
+ compute(): IMutationResult
- runWorker( in worker: IQueueWorker)
# createWorker( in queue: Queue, in client: IQueueClient): IQueueWorker
# createQueueClient( in queue: Queue): IQueueClient
+ getQueueSize(): int
«Create» + MutationClient( in testRun: IInitialTestsRun, in targetClasses: String, in operators: IDescriber)
# createMutationResult( in client: IQueueClient): IMutationResult
# createResult( in timer: Timer, in tests: IInitialTestsRun, in results: IClassMutationResult): IMutationResult
+ getTestRun(): IInitialTestsRun
+ getWorkProgressObserver(): Observer

LocalMutationClient
compute
runWorker
createWorker
createQueueClient
getQueueSize
MutationClient
createMutationResult
compute
createTargetClass
createMutationResults
createMutationWork
createResult
getTestRun
getWorkProgressObserver
```

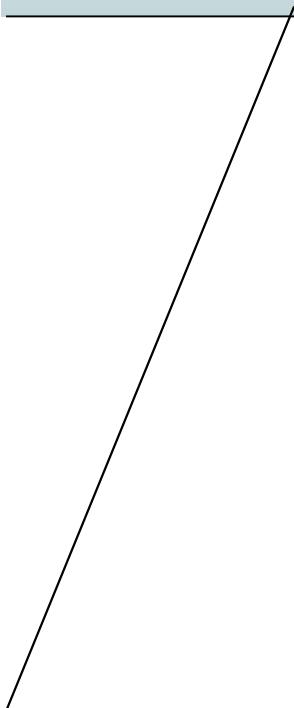


LocalMutationClient

IDescribable, in workFactory: IMutationWorkFactory, in workProgressObserver: Observer, in workspace: String, in threadCount: int)

criptable, in workFactory: IMutationWorkFactory, in workProgressObserver: Observer)

nResult





UniqueLinesHomFact

«Create» + UniqueLinesHomFactory(in statistic: IDurationS
 # isMutationValid(in hom: IMutant, in mutationBytecc
 «Create» + AbstractHomFactory(in statistic: IDurationS
 + create(in foms: IMutant, in operators: IMutationOperat
 # isMutationValid(in hom: IMutant, in mutationBytecc
 + create()
 + create(in null: <Undefined>)
 + create(): IMutant
 + create(in null: <Undefined>): IMutant
 + create(in foms: <Undefined>): IMutant
 + create(in foms: IMutant): IMutant
 + create(in foms: IMutant): IMutant
 + create(in foms: IMutant): IMutant
 + create(in foms: IMutant, in null: <Undefined>): IMutant
 + create(in foms: IMutant, in operators: <Undefined>)
 + create(in foms: IMutant, in operators: IMutationOperat
 + create(in foms: IMutant, in operators: IMutationOperat
 + create(in foms: IMutant, in operators: IMutationOperat

UniqueLinesHomFactory
isMutationValid
AbstractHomFactory
create
allMutationsIntroduced

ory	
onStatistic)	
ode: IMutantBytecode): boolean	
tistic)	
erator): IMutant	
de: IMutantBytecode): boolean	
tant	
): IMutant	
erator): IMutant	
erator): IMutant	
erator): IMutant	

BaseHomFactory
«Create» + BaseHomFactory(in statistic: IDurationStatistic)
isMutationValid(in hom: IMutant, in mutationBytecode: IMutantBytecode): boolean
«Create» + AbstractHomFactory(in statistic: IDurationStatistic)
+ create(in foms: IMutant, in operators: IMutationOperator): IMutant
isMutationValid(in hom: IMutant, in mutationBytecode: IMutantBytecode): boolean
+ create()
+ create(in null: <Undefined>)
+ create(): IMutant
+ create(in null: <Undefined>): IMutant
+ create(in foms: <Undefined>): IMutant
+ create(in foms: IMutant): IMutant
+ create(in foms: IMutant): IMutant
+ create(in foms: IMutant): IMutant
+ create(in foms: IMutant, in null: <Undefined>): IMutant
+ create(in foms: IMutant, in operators: <Undefined>): IMutant
+ create(in foms: IMutant, in operators: IMutationOperator): IMutant
+ create(in foms: IMutant, in operators: IMutationOperator): IMutant
+ create(in foms: IMutant, in operators: IMutationOperator): IMutant
BaseHomFactory
isMutationValid
AbstractHomFactory
create
allMutationsIntroduced



InfiniteLoopGuardClassMutator

```
- timeout: long [1]
# cn: ClassNode [1]
+ className: String [1]

«Create» + InfiniteLoopGuardClassMutator( in cv: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int, in tir
«Create» + InfiniteLoopGuardClassMutator()
+ visitMethod( in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): MethodVis
# mutateClass( in cn: ClassNode)
«Create» + AbstractTreeClassMutater( in cv: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int)
«Create» + AbstractTreeClassMutater()
# mutateClass( in cn: ClassNode)
+ visit( in version: int, in access: int, in name: String, in signature: String, in superName: String, in interfaces: Strin
+ visitAnnotation( in desc: String, in visible: boolean): AnnotationVisitor
+ visitAttribute( in attr: Attribute)
+ visitField( in access: int, in name: String, in desc: String, in signature: String, in value: Object): FieldVisitor
+ visitInnerClass( in name: String, in outerName: String, in innerName: String, in access: int)
+ visitMethod( in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): MethodVis
+ visitOuterClass( in owner: String, in name: String, in desc: String)
+ visitSource( in source: String, in debug: String)
+ visitEnd()
«Create» + AbstractClassMutater( in cv: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int, in countingMu
+ getMutationPoints(): IMutationPoint
+ getMutantLineNumber(): int
+ getMutantDescription(): String
+ getMethodDescriptor(): String
+ getMethodName(): String
+ setMutantLineNumber( in lineNumber: int)
+ setMutantDescription( in description: String)
+ setMutatedMethodName( in methodName: String)
+ setMutatedMethodDescriptor( in descriptor: String)
+ isCountingMutants(): boolean
+ shouldMutate(): boolean
+ getMutantIndex(): int
+ nextMutationPoint()
+ nextMutationPoint( in mutantsCount: int)
+ getMutantLineNumber()
+ getMutantLineNumber( in null: <Undefined>)
+ getMutantDescription()
+ getMutantDescription( in null: <Undefined>)
+ getMethodDescriptor()
+ getMethodDescriptor( in null: <Undefined>)
+ getMethodName()
+ getMethodName( in null: <Undefined>)
+ getMutationPoints()
+ getMutationPoints( in null: <Undefined>)
+ getMutationPoints(): IMutationPoint
+ getMutationPoints(): IMutationPoint
+ getMutationPoints(): IMutationPoint
```

```
InfiniteLoopGuardClassMutator
InfiniteLoopGuardClassMutator
visitMethod
mutateClass
«External» LoopInfo
LoopFinder
LoopMutator
AbstractTreeClassMutater
AbstractTreeClassMutater
visit
visitAnnotation
visitAttribute
```

neout: long)

:itor

g)

:itor

itants: boolean)

InterruptionGuardClassMutator

- INIT: String [1]
+ className: String [1]

«Create» + InterruptionGuardClassMutator()
«Create» + InterruptionGuardClassMutator(in cv: ClassVisitor, in mutationPointIndex: int, in r
+ visitMethod(in access: int, in name: String, in desc: String, in signature: String, in exceptio
- isConstructor(in name: String): boolean
- isAccessible(in access: int): boolean
«Create» + AbstractCoreClassMutater(in cv: ClassVisitor, in mutationPointIndex: int, in mutan
«Create» + AbstractCoreClassMutater()
+ visit(in version: int, in access: int, in name: String, in signature: String, in superName: Stri
+ visitSource(in source: String, in debug: String)
+ visitOuterClass(in owner: String, in name: String, in desc: String)
+ visitAnnotation(in desc: String, in visible: boolean): AnnotationVisitor
+ visitAttribute(in attr: Attribute)
+ visitInnerClass(in name: String, in outerName: String, in innerName: String, in access: int)
+ visitField(in access: int, in name: String, in desc: String, in signature: String, in value: Obj
+ visitMethod(in access: int, in name: String, in desc: String, in signature: String, in exception
+ visitEnd()
«Create» + AbstractClassMutater(in cv: ClassVisitor, in mutationPointIndex: int, in mutantIndex:
+ getMutationPoints(): IMutationPoint
+ getMutantLineNumber(): int
+ getMutantDescription(): String
+ getMethodDescriptor(): String
+ getMethodName(): String
+ setMutantLineNumber(in lineNumber: int)
+ setMutantDescription(in description: String)
+ setMutatedMethodName(in methodName: String)
+ setMutatedMethodDescriptor(in descriptor: String)
+ isCountingMutants(): boolean
+ shouldMutate(): boolean
+ getMutantIndex(): int
+ nextMutationPoint()
+ nextMutationPoint(in mutantsCount: int)
+ getMutantLineNumber()
+ getMutantLineNumber(in null: <Undefined>)
+ getMutantDescription()
+ getMutantDescription(in null: <Undefined>)
+ getMethodDescriptor()
+ getMethodDescriptor(in null: <Undefined>)
+ getMethodName()
+ getMethodName(in null: <Undefined>)
+ getMutationPoints()
+ getMutationPoints(in null: <Undefined>)
+ getMutationPoints(): IMutationPoint
+ getMutationPoints(): IMutationPoint
+ getMutationPoints(): IMutationPoint

InterruptionGuardClassMutator
 InterruptionGuardClassMutator
 visitMethod
 isConstructor
 isAccessible
 AbstractCoreClassMutater
 AbstractCoreClassMutater
 visit
 visitSource
 visitOuterClass
 visitAnnotation
 visitAttribute
 visitInnerClass

mutantIndex: int)
ns: String): MethodVisitor

tIndex: int)

g, in interfaces: String)

ct): FieldVisitor
ns: String): MethodVisitor

x: int, in countingMutants: boolean)

MutationOperatorsFactory

- LOGGER: Logger [1]
- names: String [*]
- serialVersionUID: long [1]

«Create» + MutationOperatorsFactory(in operators: String)
+ create(in env: IEnvironment): IMutationOperator
+ getDescriptions(): IDescribable
- instantiateOperators(in env: IEnvironment): IMutationOperator
- instantiateMutationOperator(in name: String): AbstractMutationOperatc
- addAllOperators()
- add(in operator: Class)

MutationOperatorsFactory

create
getDescriptions
instantiateOperators
instantiateMutationOperator
addAllOperators
add

MapCoverage

- coverage: Map [1]

```
«Synchronized» + addClass( in sourceClass: String, in testClass: String)
«Synchronized» + getCoveredClasses( in testClass: String): Set
«Synchronized» + getCoveringTestClasses( in sourceClass: String): Set
+ isCovered( in sourceClass: String): boolean
«Synchronized» + getCoveringTestMethods( in sourceClass: String, in testClass: String, in lines: Integer): Set
«Synchronized» + addMethod( in sourceClass: String, in testClass: String, in methodCoverage: MethodCoverage)
+ countCoveringTestClasses( in sourceClass: String): int
- getSingleTestCoverage( in sourceClass: String, in testClass: String): TestCoverage
- getTestCoverage( in sourceClass: String): Set
- getMethodCoverage( in sourceClass: String, in testClass: String): Set
# getCoverageMap(): Map
+ addClass()
+ addClass( in null: <Undefined>)
+ addClass( in sourceClass: <Undefined>)
+ addClass( in sourceClass: String)
+ addClass( in sourceClass: String, in null: <Undefined>)
+ addClass( in sourceClass: String, in testClass: <Undefined>)
+ getCoveredClasses()
+ getCoveredClasses( in null: <Undefined>)
+ getCoveredClasses(): Set
+ getCoveredClasses( in null: <Undefined>): Set
+ getCoveredClasses( in testClass: <Undefined>): Set
+ getCoveringTestClasses()
+ getCoveringTestClasses( in null: <Undefined>)
+ getCoveringTestClasses(): Set
+ getCoveringTestClasses( in null: <Undefined>): Set
+ getCoveringTestClasses( in sourceClass: <Undefined>): Set
+ countCoveringTestClasses()
+ countCoveringTestClasses( in null: <Undefined>)
+ countCoveringTestClasses(): int
+ countCoveringTestClasses( in null: <Undefined>): int
+ countCoveringTestClasses( in sourceClass: <Undefined>): int
+ isCovered()
+ isCovered( in null: <Undefined>)
+ isCovered(): boolean
+ isCovered( in null: <Undefined>): boolean
+ isCovered( in sourceClass: <Undefined>): boolean
+ getCoveringTestMethods()
+ getCoveringTestMethods( in null: <Undefined>)
+ getCoveringTestMethods(): Set
+ getCoveringTestMethods( in null: <Undefined>): Set
+ getCoveringTestMethods( in sourceClass: <Undefined>): Set
+ getCoveringTestMethods( in sourceClass: String): Set
+ getCoveringTestMethods( in sourceClass: String, in null: <Undefined>): Set
+ getCoveringTestMethods( in sourceClass: String, in testClass: <Undefined>): Set
+ getCoveringTestMethods( in sourceClass: String, in testClass: String): Set
+ getCoveringTestMethods( in sourceClass: String, in testClass: String, in null: <Undefined>): Set
+ getCoveringTestMethods( in sourceClass: String, in testClass: String, in lines: <Undefined>): Set
+ getCoveringTestMethods( in sourceClass: String, in testClass: String, in lines: Integer): Set
+ getCoveringTestMethods( in sourceClass: String, in testClass: String, in lines: Integer): Set
+ getCoveringTestMethods( in sourceClass: String, in testClass: String, in lines: Integer): Set
+ addMethod()
+ addMethod( in null: <Undefined>)
+ addMethod( in sourceClass: <Undefined>)
+ addMethod( in sourceClass: String)
+ addMethod( in sourceClass: String, in null: <Undefined>)
+ addMethod( in sourceClass: String, in testClass: <Undefined>)
+ addMethod( in sourceClass: String, in testClass: String)
+ addMethod( in sourceClass: String, in testClass: String, in null: <Undefined>)
```

JUnitTestResult

- name: String [1]
- passed: boolean [1]
- duration: long [1]
- exceptions: Throwable [*]
- details: DetailedTestResult [1]

«Create» + JUnitTestResult(in name: String, in passed: boolean, in duration: long, in exceptions: Throwable, in details: DetailedTestResult)
+ getClassName(): String
+ getDuration(): long
+ passed(): boolean
+ getThrownExceptions(): Throwable
- getMethods(in descriptions: Description): Set
+ getTestMethods(): Set
+ getFailingTestMethods(): Set
+ getFailingByInfiniteLoopGuardTestMethods(): Set
+ getSuccessfulTestMethods(): Set

JUnitTestResult
getClassName
getDuration
passed
getThrownExceptions
getMethods
getTestMethods
getFailingTestMethods
getFailingByInfiniteLoopGuardTestMethods
getSuccessfulTestMethods

ils: DetailedTestResult)

CoverageT

```
- LOGGER: Logger [1]
- testClass: String [1]
- testMethod: String [1]
- detailedResult: DetailedTestResult [1]
- loaderFactory: ICoverageClassLoaderFactory [1]

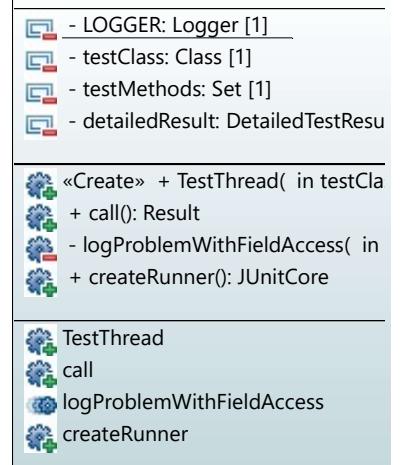
«Create» + CoverageTestThread( in testName: String, in testMethod: String, in det
+ call(): Result
# createAnalyzer( in executionData: ExecutionDataStore, in loader: TestClassLoader): Cov
# createInstrumenter( in runtime: IRuntime): Instrumenter
# createRuntimeData(): RuntimeData
# createRuntime(): IRuntime
+ createRunner(): JUnitCore

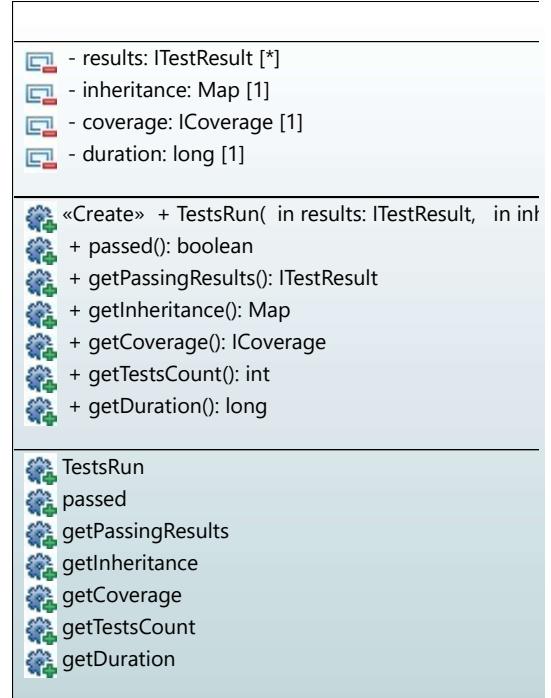
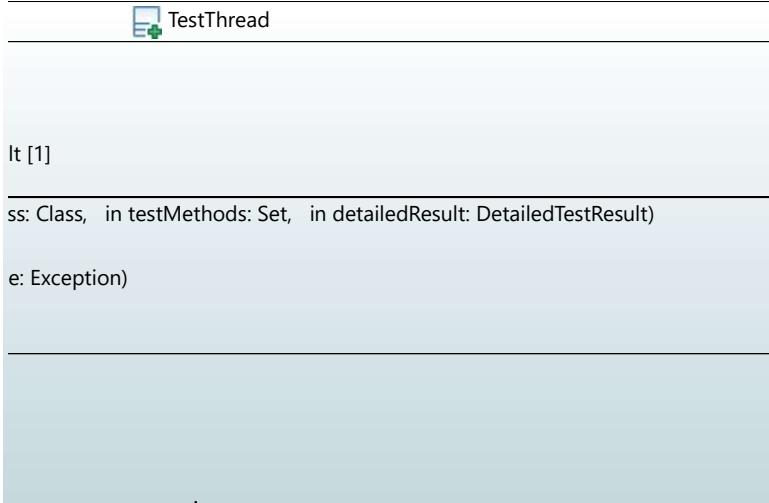
CoverageTestThread
call
createAnalyzer
createInstrumenter
createRuntimeData
createRuntime
createRunner
```

estThread

detailedResult: DetailedTestResult, in factory: ICoverageClassLoaderFactory)

'erageAnalyzer





TestsRun

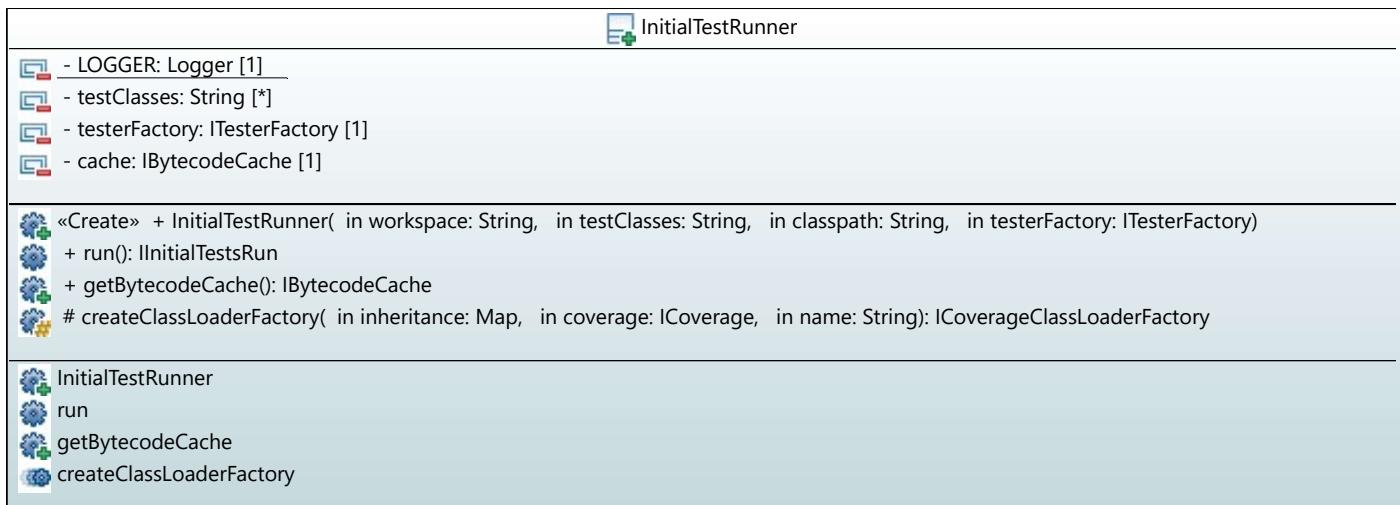
inheritance: Map, in coverage: ICoverage, in duration: long)

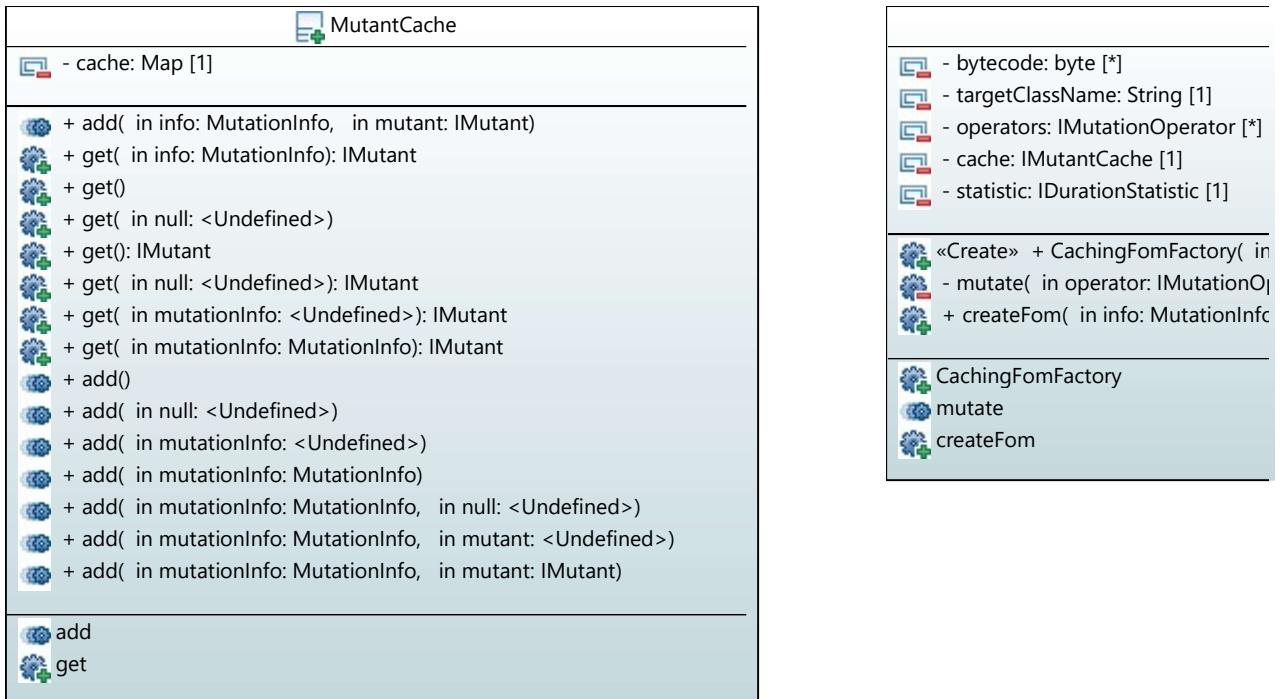
<ul style="list-style-type: none">- tester: ITester [1]- targetClass: ITargetClass [1]- cache: IBytecodeCache [1]- statistic: IDurationStatistic [1]- maxInfiniteLoopGuardTimeout: long [1]- aliveMutants: IMutant [*]- killedMutants: IMutant [*]- research: IResearchDataCollector [1]	<p>«Create» + MutantEvaluator(in targetClass: ITargetClass, in tests: TestDuration, in bytecode: byte[], in aliveMutants: IMutant, in killedMutants: IMutant, in cache: IBytecodeCache, in tester: ITester, in statistic: IDurationStatistic, in maxInfiniteLoopGuardTimeout: long, in research: IResearchDataCollector)</p> <ul style="list-style-type: none">+ evaluate(in mutants: IMutant, in include: boolean)- getCoveringTestClasses(in tests: TestDuration, in targetClass: ITargetClass)- saveWithOldTestResults(in mutant: IMutant)- getOldResults(in mutant: IMutant): ITestResult- saveMutant(in mutant: IMutant, in killed: boolean)- areTestsKillingMutant(in tests: TestDuration, in mutant: IMutant)+ getInfiniteLoopGuardTimeout(in tests: TestDuration, in targetClass: ITargetClass)+ getTestClassExecutionTimeout(in testClassDuration: TestDuration, in targetClass: ITargetClass)- isTestClassKillingMutant(in test: TestDuration, in targetClass: ITargetClass)# saveResearchData(in mutant: IMutant, in testrunResults: ITestRunResults)# createClassLoaderFactory(in mutantBytecode: byte[], in targetClass: ITargetClass)+ getAliveMutants(): IMutant+ getKilledMutants(): IMutant+ trimSize()
	<p>MutantEvaluator</p> <ul style="list-style-type: none">evaluategetCoveringTestClassessaveWithOldTestResultsgetOldResultssaveMutantareTestsKillingMutantgetInfiniteLoopGuardTimeoutgetTestClassExecutionTimeoutisTestClassKillingMutantsaveResearchDatacreateClassLoaderFactorygetAliveMutantsgetKilledMutantstrimSize



MutantEvaluator

```
ass, in cache: IBytecodeCache, in tester: ITester, in statistic: IDurationStatistic, in infiniteLoopGuardTimeout: long)  
)  
mutant: IMutant): TestDuration  
  
)  
tant: IMutant): boolean  
n: long  
i: long): long  
overingTestMethods: Set, in mutant: IMutant): boolean  
esult: ITestResult)  
, in timeout: long): IMutationClassLoaderFactory
```



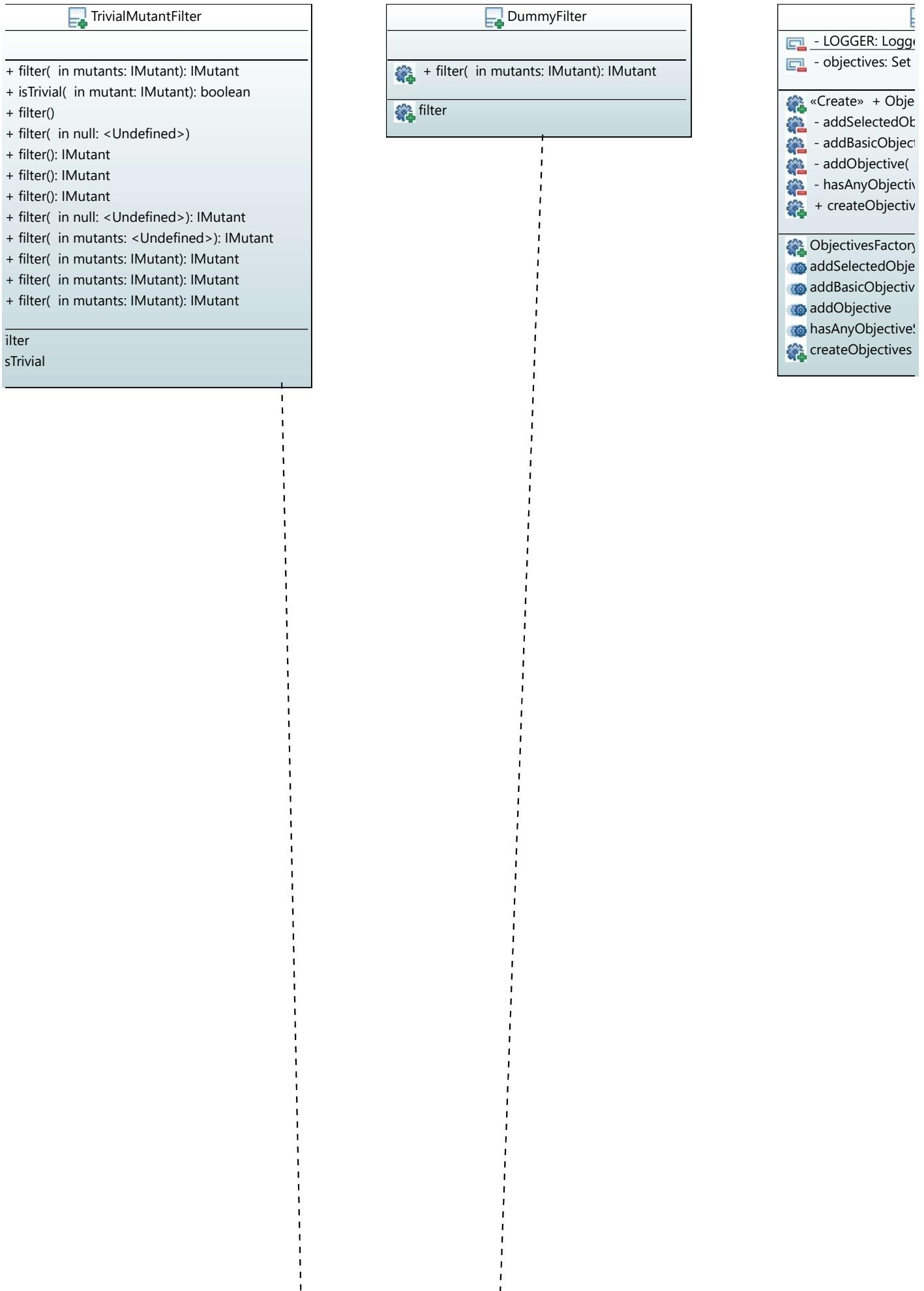


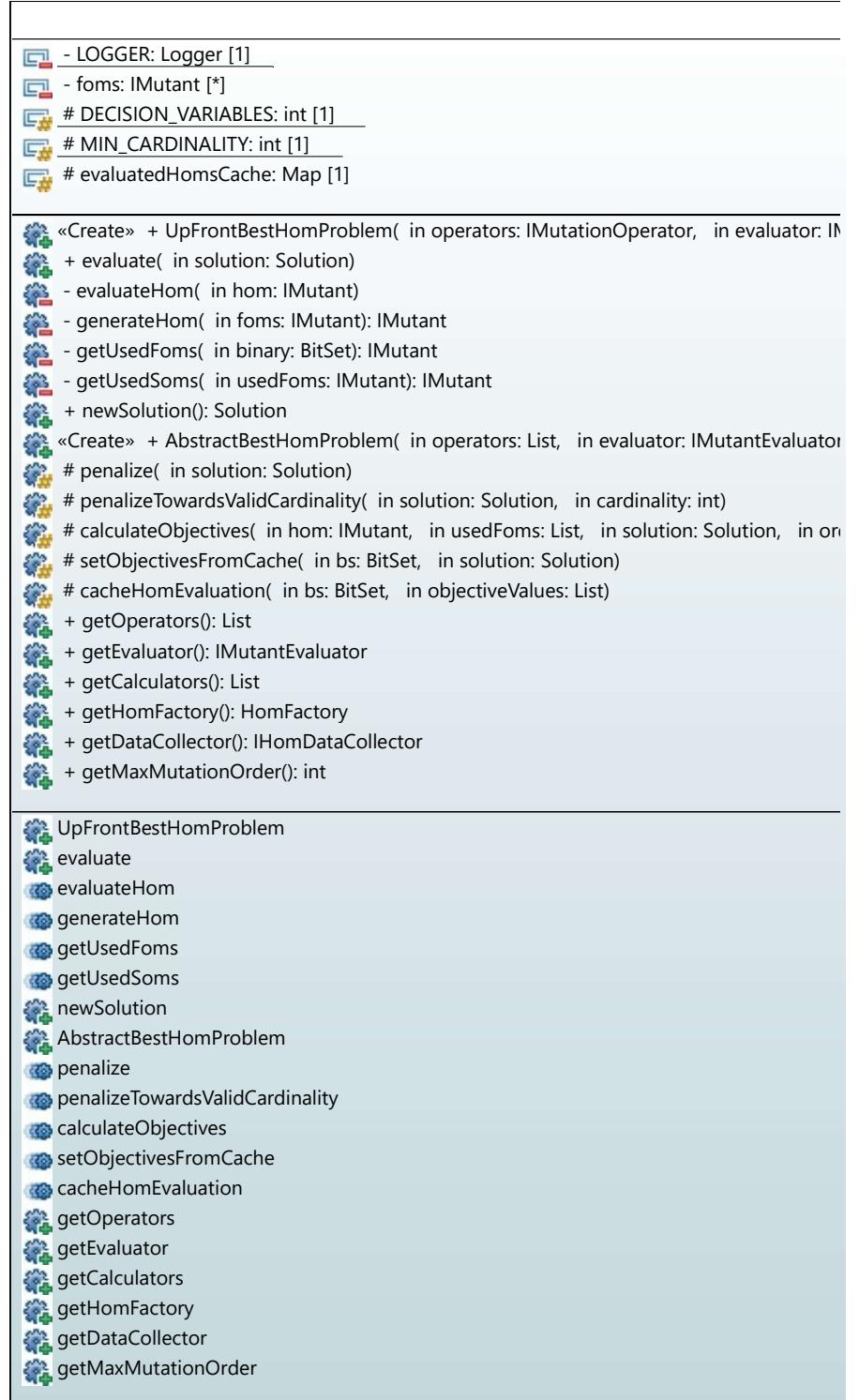
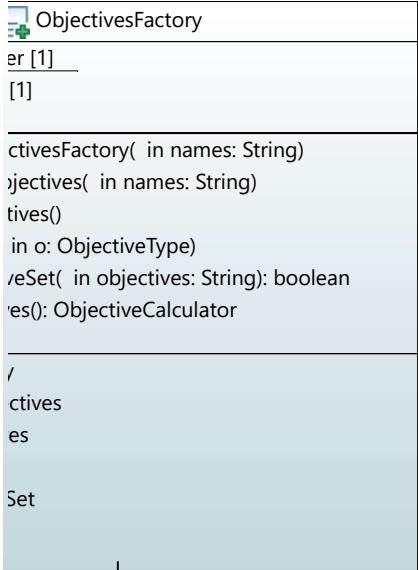
CachingFormFactory

```
| bytecode: byte, in targetClassName: String, in operators: IMutationOperator, in statistic: IDurationStatistic)  
operator, in pointIndex: int, in mutantIndex: int): IMutant  
>: IMutant
```



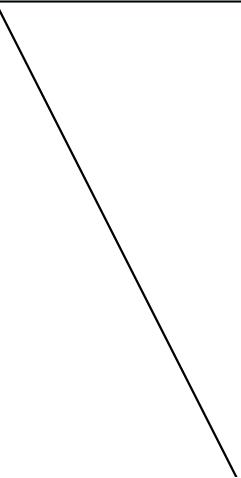
f
i





 UpFrontBestHomProblem

IMutantEvaluator, in calculators: ObjectiveCalculator, in homFactory: HomFactory, in foms: IMutant, in dataCollector: IHomDataCollector, in maxMutationOrder: int)
; in calculators: List, in homFactory: HomFactory, in dataCollector: IHomDataCollector, in maxMutationOrder: int)
der: int): List



MutationOrder: int)

```
- LOGGER: Logger [1]
- fomFactory: FomFactory [1]
- bytecode: byte [*]
- filter: IMutantFilter [1]
- possibleMutations: List [1]
# DECISION_VARIABLES: int [1]
# MIN_CARDINALITY: int [1]
# evaluatedHomsCache: Map [1]

«Create» + NotEquivalentBestHomProblem( in operators: List, in evaluator: IMutantEvaluator)
+ evaluate( in solution: Solution)
- allFomsArePassingFiltration( in mutants: List): boolean
- getUsedMutations( in bs: BitSet): List
- evaluateFoms( in foms: List)
- extractNotEvaluatedFoms( in foms: List): List
- generateHom( in foms: List): IMutant
- evaluateHom( in hom: IMutant)
+ newSolution(): Solution
# getPossibleMutations(): List
- loadMutations(): List
- getKillingTests( in mutant: IMutant): Set
- getKillingTests( in foms: List): Set
«Create» + AbstractBestHomProblem( in operators: List, in evaluator: IMutantEvaluator)
# penalize( in solution: Solution)
# penalizeTowardsValidCardinality( in solution: Solution, in cardinality: int)
# calculateObjectives( in hom: IMutant, in usedFoms: List, in solution: Solution)
# setObjectivesFromCache( in bs: BitSet, in solution: Solution)
# cacheHomEvaluation( in bs: BitSet, in objectiveValues: List)
+ getOperators(): List
+ getEvaluator(): IMutantEvaluator
+ getCalculators(): List
+ getHomFactory(): HomFactory
+ getDataCollector(): IHomDataCollector
+ getMaxMutationOrder(): int

NotEquivalentBestHomProblem
evaluate
allFomsArePassingFiltration
getUsedMutations
evaluateFoms
extractNotEvaluatedFoms
generateHom
evaluateHom
newSolution
getPossibleMutations
loadMutations
getKillingTests
getKillingTests
AbstractBestHomProblem
penalize
penalizeTowardsValidCardinality
calculateObjectives
setObjectivesFromCache
cacheHomEvaluation
getOperators
getEvaluator
getCalculators
getHomFactory
getDataCollector
getMaxMutationOrder
```

or: IMutantEvaluator, in calculators: List, in homFactory: HomFactory, in fomFactory: FomFactory, in bytecode: byte, in dataCollector: IHomData

utantEvaluator, in calculators: List, in homFactory: HomFactory, in dataCollector: IHomDataCollector, in maxMutationOrder: int)

t)

solution, in order: int): List

Collector, in maxMutationOrder: int, in filter: IMutantFilter)

```
[ ] - LOGGER: Logger [1]
[ ] - fomFactory: FomFactory [1]
[ ] - bytecode: byte [*]
[ ] - filter: IMutantFilter [1]
[ ] - possibleMutations: MutationInfo
[ ] # DECISION_VARIABLES: int [1]
[ ] # MIN_CARDINALITY: int [1]
[ ] # evaluatedHomsCache: Map [1]
```

```
«Create» + OnTheFlyBestHomProt
+ evaluate( in solution: Solution)
- allFomsArePassingFiltration( in nr)
- getUsedMutations( in bs: BitSet)
- evaluateFoms( in foms: IMutant)
- extractNotEvaluatedFoms( in foms)
- generateHom( in foms: IMutant)
- evaluateHom( in hom: IMutant)
+ newSolution(): Solution
# getPossibleMutations(): MutationInfo
- loadMutations(): MutationInfo
«Create» + AbstractBestHomProbl
# penalize( in solution: Solution)
# penalizeTowardsValidCardinality()
# calculateObjectives( in hom: IMutant)
# setObjectivesFromCache( in bs: BitSet)
# cacheHomEvaluation( in bs: BitSet)
+ getOperators(): List
+ getEvaluator(): IMutantEvaluator
+ getCalculators(): List
+ getHomFactory(): HomFactory
+ getDataCollector(): IHomDataCollector
+ getMaxMutationOrder(): int
```

```
OnTheFlyBestHomProblem
evaluate
allFomsArePassingFiltration
getUsedMutations
evaluateFoms
extractNotEvaluatedFoms
generateHom
evaluateHom
newSolution
getPossibleMutations
loadMutations
AbstractBestHomProblem
penalize
penalizeTowardsValidCardinality
calculateObjectives
setObjectivesFromCache
cacheHomEvaluation
getOperators
getEvaluator
getCalculators
getHomFactory
getDataCollector
getMaxMutationOrder
```

[*]

```
    \olem( in operators: IMutationOperator, in evaluator: IMutantEvaluator, in calculators: ObjectiveCalculator, in homFactory: HomFactory, in fomFac
    \mutants: IMutant): boolean
    : MutationInfo

    ns: IMutant): IMutant
    : IMutant

    \lInfo

    em( in operators: List, in evaluator: IMutantEvaluator, in calculators: List, in homFactory: HomFactory, in dataCollector: IHomDataCollector, in n
    in solution: Solution, in cardinality: int)
    \tiant, in usedFoms: List, in solution: Solution, in order: int): List
    BitSet, in solution: Solution)
    et, in objectiveValues: List)
```

llector

em

:tory: FomFactory, in bytecode: byte, in dataCollector: IHomDataCollector, in maxMutationOrder: int, in filter: IMutantFilter)

maxMutationOrder: int)

CollectionClassMutator

- verifier: TypeVerifier [1]
- provider: MethodVisitorProvider [1]
+ className: String [1]

«Create» + CollectionClassMutator(in verifier: TypeVerifier, in provider: MethodVisitorProvider)
«Create» + CollectionClassMutator(in cv: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int, in v
+ visitMethod(in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): M
+ visitField(in access: int, in name: String, in desc: String, in signature: String, in value: Object): FieldVisito
+ onMutation(in lineNumber: int)
«Create» + AbstractCoreClassMutater(in cv: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int)
«Create» + AbstractCoreClassMutater()
+ visit(in version: int, in access: int, in name: String, in signature: String, in superName: String, in interfa
+ visitSource(in source: String, in debug: String)
+ visitOuterClass(in owner: String, in name: String, in desc: String)
+ visitAnnotation(in desc: String, in visible: boolean): AnnotationVisitor
+ visitAttribute(in attr: Attribute)
+ visitInnerClass(in name: String, in outerName: String, in innerName: String, in access: int)
+ visitField(in access: int, in name: String, in desc: String, in signature: String, in value: Object): FieldVisito
+ visitMethod(in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): M
+ visitEnd()
«Create» + AbstractClassMutater(in cv: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int, in co
+ getMutationPoints(): IMutationPoint
+ getMutantLineNumber(): int
+ getMutantDescription(): String
+ getMethodDescriptor(): String
+ getMethodName(): String
+ setMutantLineNumber(in lineNumber: int)
+ setMutantDescription(in description: String)
+ setMutatedMethodName(in methodName: String)
+ setMutatedMethodDescriptor(in descriptor: String)
+ isCountingMutants(): boolean
+ shouldMutate(): boolean
+ getMutantIndex(): int
+ nextMutationPoint()
+ nextMutationPoint(in mutantsCount: int)
+ getMutantLineNumber()
+ getMutantLineNumber(in null: <Undefined>)
+ getMutantDescription()
+ getMutantDescription(in null: <Undefined>)
+ getMethodDescriptor()
+ getMethodDescriptor(in null: <Undefined>)
+ getMethodName()
+ getMethodName(in null: <Undefined>)
+ getMutationPoints()
+ getMutationPoints(in null: <Undefined>)
+ getMutationPoints(): IMutationPoint
+ getMutationPoints(): IMutationPoint
+ getMutationPoints(): IMutationPoint

 CollectionClassMutator
 CollectionClassMutator
visitMethod
visitField
onMutation
AbstractCoreClassMutater
AbstractCoreClassMutater
visit
visitSource
visitOuterClass
visitAnnotation
 visitAttribute

erifier: TypeVerifier, in provider: MethodVisitorProvider)

MethodVisitor

or

ices: String)

or

MethodVisitor

untingMutants: boolean)

HomDataCollector

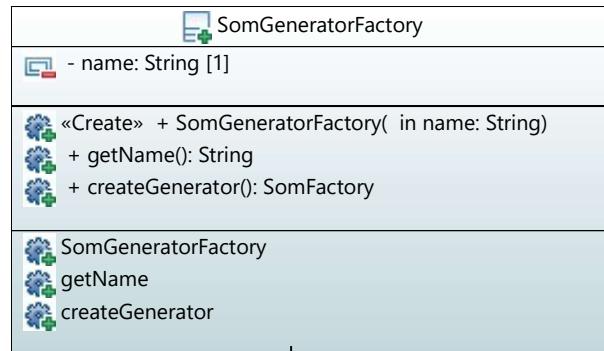
- SEPARATOR: String [1]
- LOGGER: Logger [1]
- objectives: ObjectiveCalculator [*]
- format: NumberFormat [1]
- header: boolean [1]

«Create» + HomDataCollector(in objectives:
- getHeader(): String
+ log(in hom: IMutant, in foms: IMutant,
- getObjectiveValues(in s: Solution): StringBuilder
- getHomInfo(in hom: IMutant): StringBuilder
- logMutant(in hom: IMutant, in foms: IMutant)
- getShiftingInfo(in hom: IMutant, in foms: IMutant)
- getSubsumingInfo(in hom: IMutant, in foms: IMutant)
+ log()
+ log(in null: <Undefined>)
+ log(in hom: <Undefined>)
+ log(in hom: IMutant)
+ log(in hom: IMutant, in null: <Undefined>)
+ log(in hom: IMutant, in foms: <Undefined>)
+ log(in hom: IMutant, in foms: IMutant)
+ log(in hom: IMutant, in foms: IMutant)
+ log(in hom: IMutant, in foms: IMutant)
+ log(in hom: IMutant, in foms: IMutant),
+ log(in hom: IMutant, in foms: IMutant)

HomDataCollector

getHeader
log
getObjectiveValues
getHomInfo
logMutant
getShiftingInfo
getSubsumingInfo

```
ctor  
  
: ObjectiveCalculator)  
  
in s: Solution)  
uilder  
er  
tant, in solution: Solution)  
IMutant): StringBuilder  
ms: IMutant): StringBuilder  
  
  
l>)  
<d>)  
  
  
in null: <Undefined>  
in s: <Undefined>
```





GuardInstrumenter

ds: IMutationOperator [*]

e» + GuardInstrumenter(in timeout: long)
rument(in mutatedBytecode: byte): byte
ument(in mutatedBytecode: byte, in guard: IMutationOperator): byte

Instrumenter
nent
nent

- bytecode: byte [*]
- line: int [1]
- description: String [1]
- methodDescriptor: String [1]
- methodName: String [1]

«Create» + MutantBytecode(in bytecode: byte
«Create» + MutantBytecode(in bytecode: byte
«Create» + MutantBytecode(in mutant: IMutationOperator): byte
+ getBytecode(): byte
+ getLineNumber(): int
+ getDescription(): String
+ getMethodDescriptor(): String
+ getMethodName(): String
+ hashCode(): int
+ equals(in obj: Object): boolean

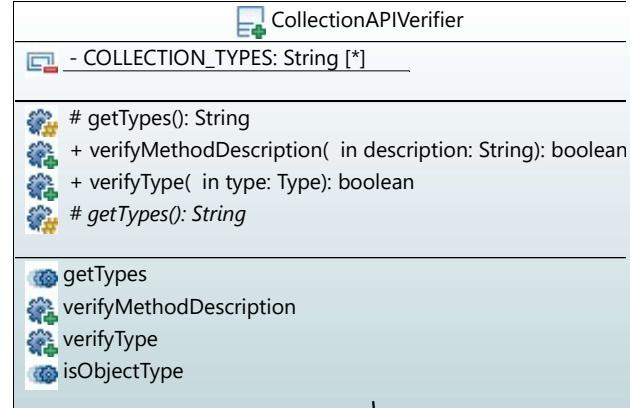
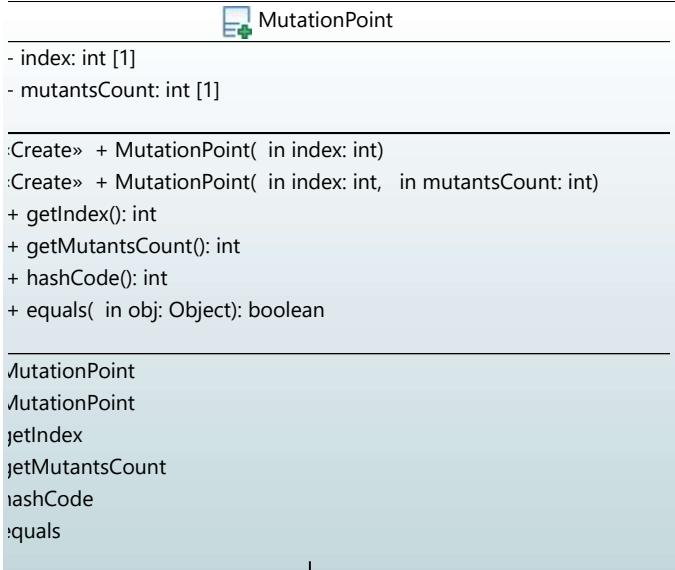
MutantBytecode
MutantBytecode
MutantBytecode
getBytecode
getLineNumber
getDescription
getMethodDescriptor
getMethodName
hashCode
equals



MutantBytecode

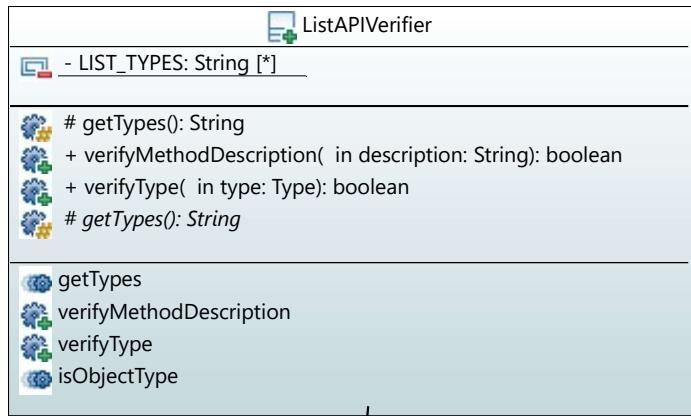
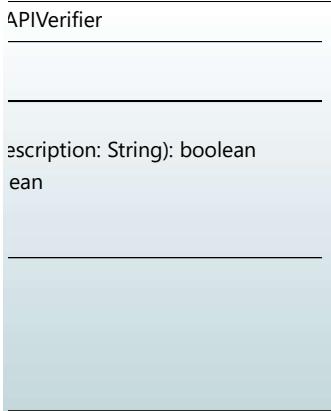
```
byte, in lineNumber: int, in description: String, in methodName: String, in methodDescriptor: String)  
byte, in lineNumber: int)  
utantBytecode, in bytecode: byte)
```





SortedCollectionAPIVerifier
<code>- SORTED_TYPES: String [*]</code>
<code># getTypes(): String</code> <code>+ verifyMethodDescription(in description: String): boolean</code> <code>+ verifyType(in type: Type): boolean</code> <code># getTypes(): String</code>
<code>getTypes</code> <code>verifyMethodDescription</code> <code>verifyType</code> <code>isObjectType</code>

ListInterface
<code>- LIST_TYPES: String [*]</code>
<code># getTypes(): String</code> <code>+ verifyMethodDescription(in description: String): boolean</code> <code>+ verifyType(in type: Type): boolean</code> <code># getTypes(): String</code>
<code>getTypes</code> <code>verifyMethodDescription</code> <code>verifyType</code> <code>isObjectType</code>





CollectionInterfaceAPIVerifier

ECTION_TYPES: String [*]

/pes(): String
yMethodDescription(in description: String): boolean
yType(in type: Type): boolean
/pes(): String

:s
ethodDescription
pe
tType



LinkedHashSetDescriptionVerifier

- LIST_TYPES: String [*]

getTypes(): String
+ verifyMethodDescription(in description: String): boolean
+ verifyType(in type: Type): boolean
getTypes(): String

getTypes
verifyMethodDescription
verifyType
isObjectType

<p> ResearchStatistics</p> <ul style="list-style-type: none"> - start: long [1] - testsDuration: long [1] - generationDuration: long [1] - initialTestsStart: long [1] - initialTestsDuration: long [1] - lock: Object [1] - workers: Map [1] <hr/> <p>«Create» - ResearchStatistics()</p> <ul style="list-style-type: none"> + initialTestsStarted() + initialTestsStopped() + subtaskTaken(in workerId: String) + subtaskReturned(in workerId: String, in subresult: ISubresult) + getWorkers(): Map + getInitialTestsDuration(): long + getMutantsGenerationDuration(): long + getTestsDuration(): long + getDuration(): long <hr/> <p>ResearchStatistics</p> <ul style="list-style-type: none"> initialTestsStarted initialTestsStopped subtaskTaken subtaskReturned getWorkers getInitialTestsDuration getMutantsGenerationDuration getTestsDuration getDuration 	<p> + createVisitor(in methodVisitor: MethodVisitor)</p> <hr/> <p> createVisitor</p>
--	---



CSTMethodVisitorProvider

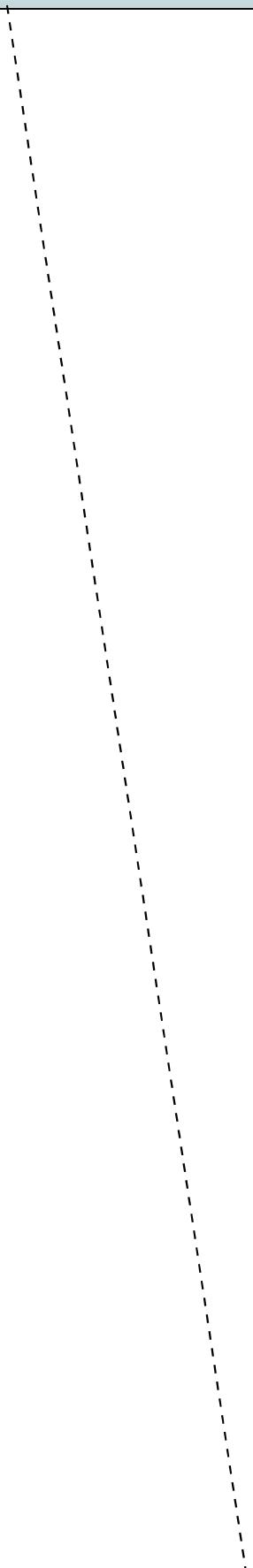
odVisitor, in access: int, in description: String, in observer: MutationObserver): MethodVisitor



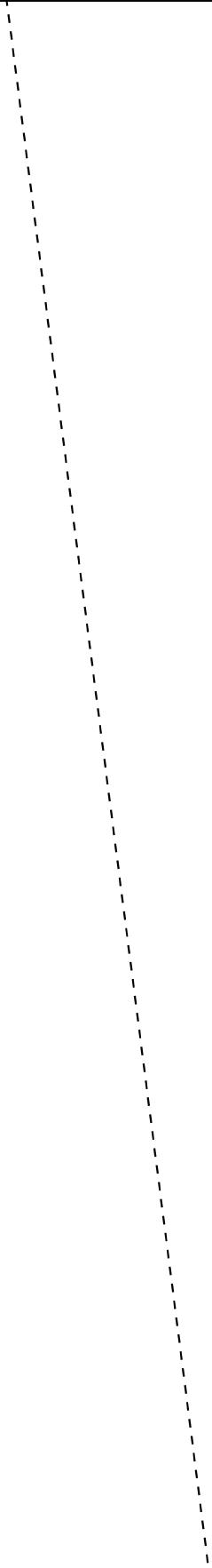
+ createVisito

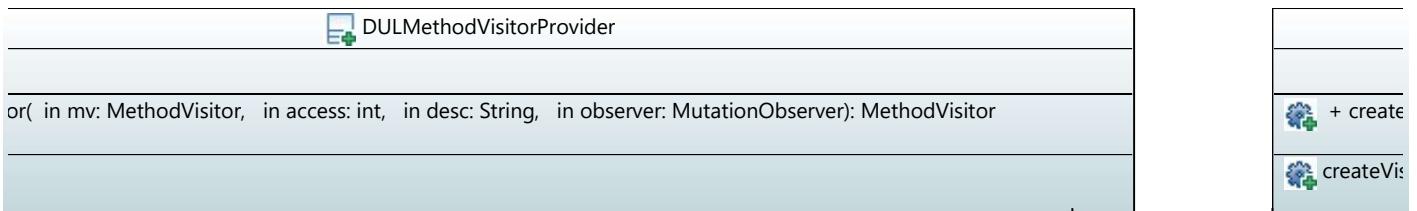


createVisitor



 CCEMethodVisitorProvider	
> or(in mv: MethodVisitor, in access: int, in desc: String, in observer: MutationObserver): MethodVisitor	
	 + createVisitor  createVisitor







REVMETHODVISITORPROVIDER

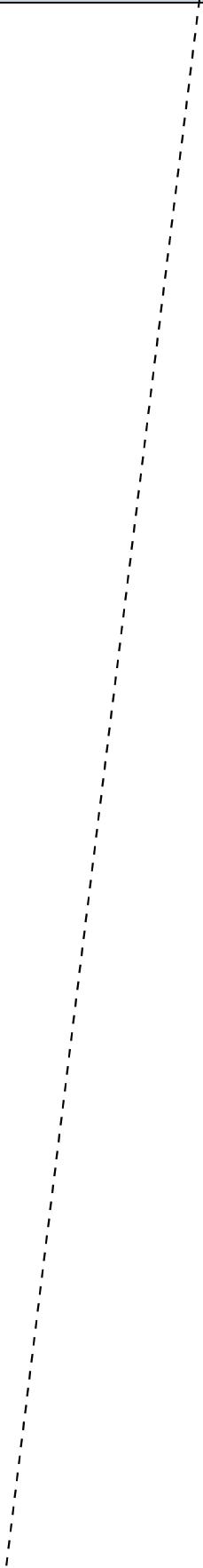
:visitor(in mv: MethodVisitor, in access: int, in desc: String, in observer: MutationObserver): MethodVisitor

sitor

+ creat

createVi

	 LSFMethodVisitorProvider	
eVisitor(in mv: MethodVisitor, in access: int, in desc: String, in observer: MutationObserver): MethodVisitor		
visitor		 +  cre

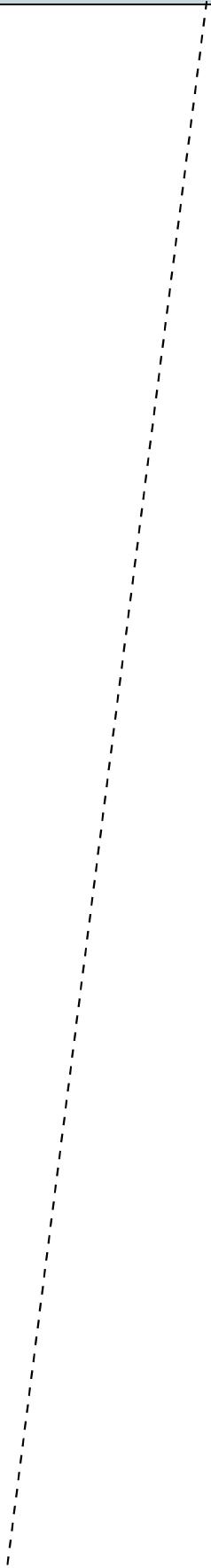




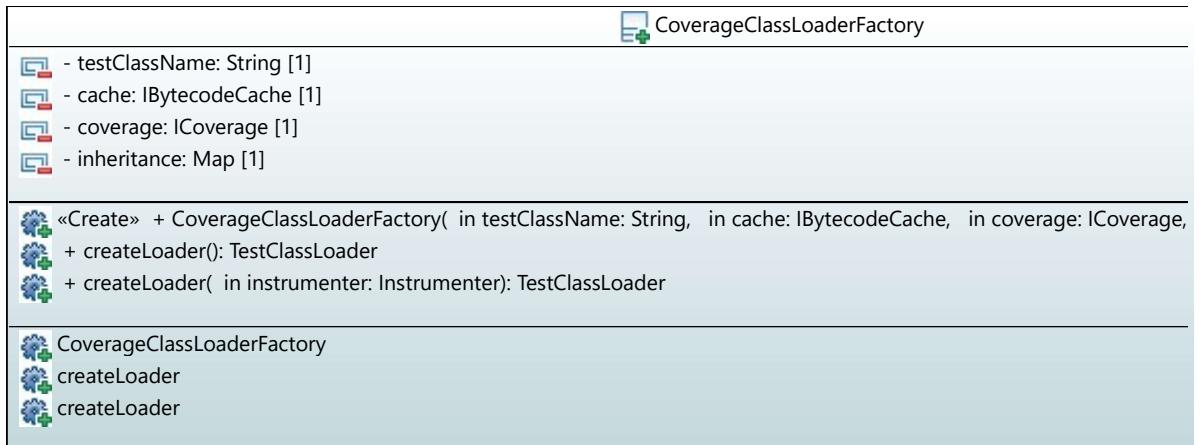
ORVMMethodVisitorProvider

createVisitor(in mv: MethodVisitor, in access: int, in desc: String, in observer: MutationObserver): MethodVisitor

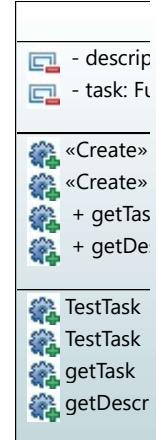
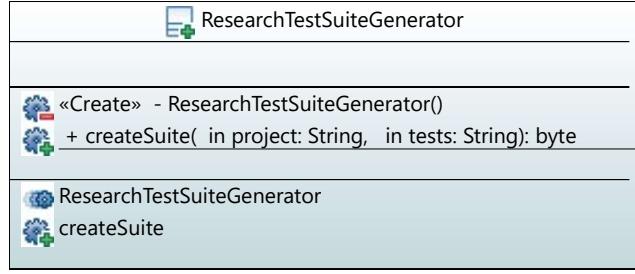
ateVisitor



 ResearchHelper
<ul style="list-style-type: none">  - project: String [1]  - dumpEnabled: boolean [1]  - LOGGER: Logger [1]
<hr/> <ul style="list-style-type: none">  «Create» - ResearchHelper() <ul style="list-style-type: none">  + setDump(in dump: boolean, in projectName: String)  + dump(in config: IClientConfig, in tests: IInitialTestsRun)  + dumpCoverage(in config: IClientConfig, in tests: IInitialTestsRun)  + dumpTestSuite3(in config: IClientConfig, in tests: IInitialTestsRun)  + dumpTestSuite3Bytecode(in config: IClientConfig, in tests: IInitialTestsRun)  + dumpTestSuite4(in config: IClientConfig, in tests: IInitialTestsRun)  - saveFile(in sb: StringBuilder, in path: String)  - getClassKind(in name: String, in bytecode: byte, in coverage: ICoverage, in env: IEnvironment): ClassKind
<hr/> <ul style="list-style-type: none">  ResearchHelper  setDump  dump  dumpCoverage  dumpTestSuite3  dumpTestSuite3Bytecode  dumpTestSuite4  saveFile  getClassKind



in inheritance: Map



TestTask

option: String [1]
uture [1]

+ TestTask(in testClassName: String, in testMethodName: String, in task: Future)
+ TestTask(in testClassName: String, in testMethods: int, in task: Future)

.k(): Future
scription(): String

ption

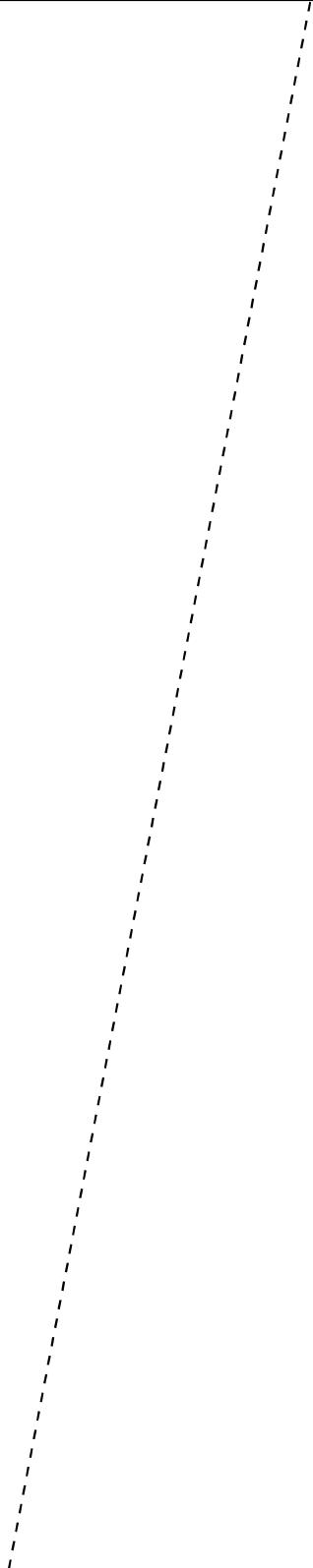
 - mutantClassName: String [1]
 - mutantBytecode: byte [*]
 - cache: IBytecodeCache [1]
 - instrumenter: Instrumenter [1]

 «Create» + MutationClassLoaderF
 + createLoader(): MutationClassLo

 MutationClassLoaderFactory
 createLoader

 MutationClassLoaderFactory

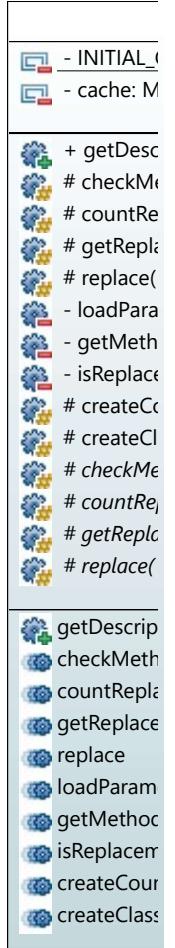
```
factory( in mutantClassName: String, in mutantBytecode: byte, in cache: IBytecodeCache, in infiniteLoopGuardTimeout: long)  
oader
```



<p>Accesses</p> <ul style="list-style-type: none"> + ACC_PUBLIC: int [1] + ACC_PRIVATE: int [1] + ACC_PROTECTED: int [1] + ACC_STATIC: int [1] + ACC_FINAL: int [1] + ACC_SUPER: int [1] + ACC_SYNCHRONIZED: int [1] + ACC_VOLATILE: int [1] + ACC_BRIDGE: int [1] + ACC_VARARGS: int [1] + ACC_TRANSIENT: int [1] + ACC_NATIVE: int [1] + ACC_INTERFACE: int [1] + ACC_ABSTRACT: int [1] + ACC_STRICT: int [1] + ACC_SYNTHETIC: int [1] + ACC_ANNOTATION: int [1] + ACC_ENUM: int [1] <hr/> <p>«Create» - Accesses()</p> <ul style="list-style-type: none"> + add(in access: int, in mod: int): int + remove(in access: int, in mod: int): int + isPublic(in mod: int): boolean + isPrivate(in mod: int): boolean + isProtected(in mod: int): boolean + isDefault(in mod: int): boolean + isStatic(in mod: int): boolean + isFinal(in mod: int): boolean + isSynchronized(in mod: int): boolean + isVolatile(in mod: int): boolean + isTransient(in mod: int): boolean + isNative(in mod: int): boolean + isInterface(in mod: int): boolean + isAbstract(in mod: int): boolean + is(in access: int, in mod: int): boolean + isNot(in access: int, in mod: int): boolean + toString(in mod: int): String <hr/> <ul style="list-style-type: none"> Accesses add remove isPublic isPrivate isProtected isDefault isStatic isFinal isSynchronized isVolatile isTransient isNative isInterface isAbstract is isNot toString 	<hr/> <hr/> <ul style="list-style-type: none"> + getDescription(): String # checkMethod(in className: String, in access: int, in mod: int): void # countReplacements(in className: String, in access: int, in mod: int): int # getReplacement(in className: String, in access: int, in mod: int): String # replace(in mv: MethodVisitor, in className: String, in access: int, in mod: int): void # createCountingClassMutater(): AbstractClassMutater # createClassMutater(in classWriter: ClassVisitor, in mod: int): ClassMutater # checkMethod(in className: String, in access: int, in mod: int): void # countReplacements(in className: String, in access: int, in mod: int): int # getReplacement(in className: String, in access: int, in mod: int): String # replace(in mv: MethodVisitor, in className: String, in access: int, in mod: int): void <hr/> <ul style="list-style-type: none"> getDescription checkMethod countReplacements getReplacement replace createCountingClassMutater createClassMutater
--	--



```
name: String, in desc: String, in signature: String, in exceptions: String): boolean  
it, in name: String, in desc: String, in signature: String, in exceptions: String): int  
in name: String, in desc: String, in signature: String, in exceptions: String, in index: int): String  
n access: int, in name: String, in desc: String, in replacement: String)  
  
:ationPointIndex: int, in mutatntIndex: int): AbstractClassMutater  
ame: String, in desc: String, in signature: String, in exceptions: String): boolean  
, in name: String, in desc: String, in signature: String, in exceptions: String): int  
n name: String, in desc: String, in signature: String, in exceptions: String, in index: int): T  
| access: int, in name: String, in desc: String, in replacement: T)
```



CAPACITY: int [1]

lap [1]

```
:ription(): String
ethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
placements( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): int
acement( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String, in index: int): int
    in mv: MethodVisitor, in className: String, in access: int, in name: String, in desc: String, in newOrder: int)
imeters( in mv: MethodVisitor, in opcode: int, in args: Type, in newOrder: int)
odReplacemnts( in access: int, in className: String, in name: String, in desc: String, in signature: String, in exceptions: String): Integer
ement( in owner: String, in name: String, in desc: String, in method: IMethodInfo): boolean
ountingClassMutater(): AbstractClassMutater
assMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutationIndex: int): AbstractClassMutater
ETHOD( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
placements( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): int
acement( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String, in index: int): T
    in mv: MethodVisitor, in className: String, in access: int, in name: String, in desc: String, in replacement: T)
```

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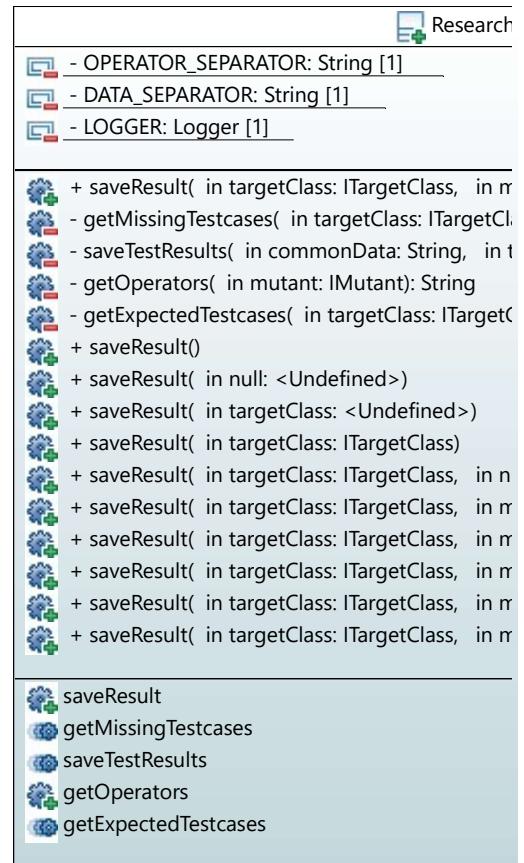
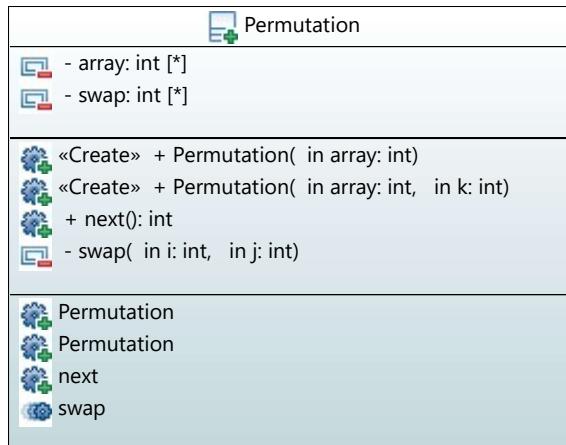
eters

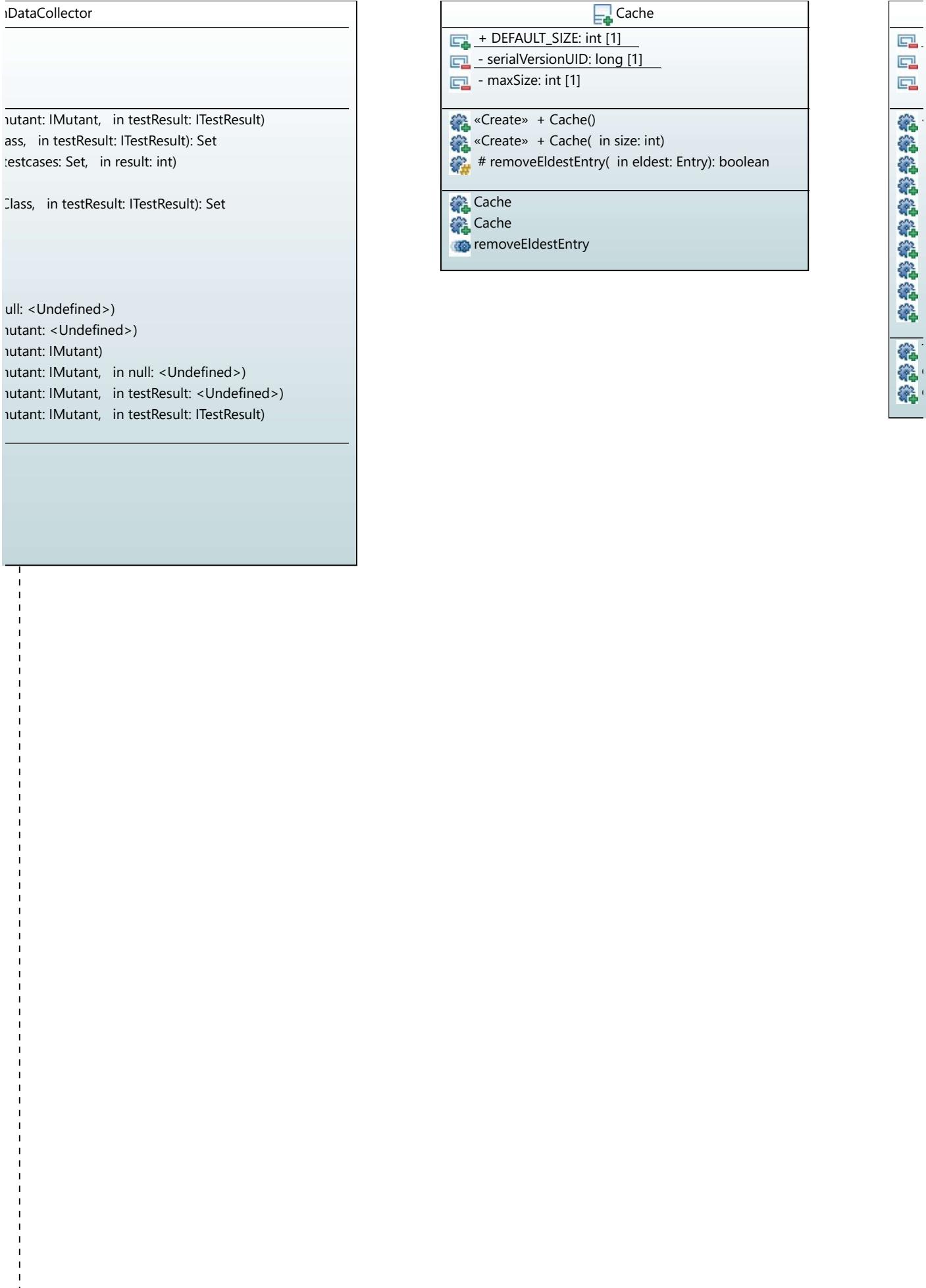
dReplacemnts

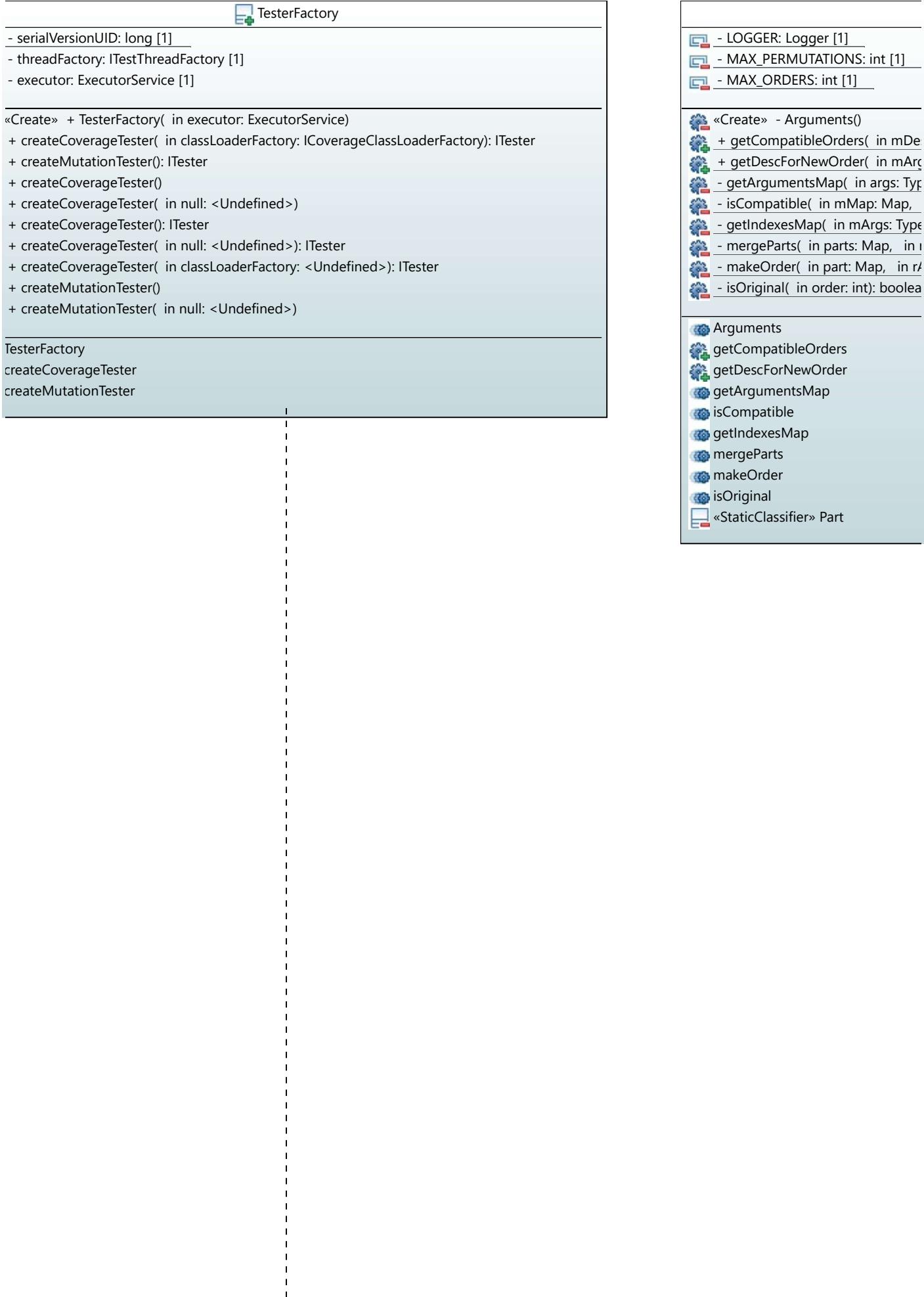
ent

ountingClassMutater

sMutater







Arguments

```
sc: String, in rDesc: String): List  
js: Type, in ret: Type, in newOrder: int): String  
oe: Map  
in rMap: Map): boolean  
e, in mMap: Map): Map  
rArgs: Type, in rIndexes: Map, in sameDesc: boolean): List  
Args: Type, in rIndexes: Map): int  
n
```

```
# methodNode: MethodNode [1]  
# lastLineNumber: int [1]  
  
«Create» + AbstractTreeMethodMutater( in mv: MethodVisitor)  
# mutate( in mn: MethodNode)  
# generateError()  
+ visitAnnotationDefault(): AnnotationVisitor  
+ visitAnnotation( in desc: String, in visible: boolean): AnnotationVisitor  
+ visitParameterAnnotation( in parameter: int, in desc: String): AnnotationVisitor  
+ visitAttribute( in attr: Attribute)  
+ visitCode()  
+ visitFrame( in type: int, in nLocal: int, in local: Object, in desc: String): void  
+ visitInsn( in opcode: int): void  
+ visitIntInsn( in opcode: int, in operand: int): void  
+ visitVarInsn( in opcode: int, in var: int): void  
+ visitTypeInsn( in opcode: int, in type: String): void  
+ visitFieldInsn( in opcode: int, in owner: String, in name: String, in desc: String): void  
+ visitMethodInsn( in opcode: int, in owner: String, in name: String, in desc: String): void  
+ visitJumpInsn( in opcode: int, in label: Label): void  
+ visitLabel( in label: Label): void  
+ visitLdcInsn( in cst: Object): void  
+ visitIincInsn( in var: int, in increment: int): void  
+ visitTableSwitchInsn( in min: int, in max: int, in dflt: Label): void  
+ visitLookupSwitchInsn( in dflt: Label, in keys: int, in targets: int): void  
+ visitMultiANewArrayInsn( in desc: String, in dims: int): void  
+ visitTryCatchBlock( in start: Label, in end: Label, in handler: Label, in desc: String): void  
+ visitLocalVariable( in name: String, in desc: String, in start: Label, in end: Label, in index: int, in desc2: String): void  
+ visitLineNumber( in line: int, in start: Label): void  
+ visitMaxs( in maxStack: int, in maxLocals: int): void  
+ visitEnd()  
«Create» + AbstractMethodMutater( in mv: MethodVisitor)  
+ getLastLineNumber(): int  
  
AbstractTreeMethodMutater  
generateError  
visitAnnotationDefault  
visitAnnotation  
visitParameterAnnotation  
visitAttribute  
visitCode  
visitFrame  
visitInsn  
visitIntInsn  
visitVarInsn  
visitTypeInsn  
visitFieldInsn  
visitMethodInsn  
visitJumpInsn  
visitLabel  
visitLdcInsn  
visitIincInsn  
visitTableSwitchInsn  
visitLookupSwitchInsn  
visitMultiANewArrayInsn  
visitTryCatchBlock  
visitLocalVariable  
visitLineNumber  
visitMaxs  
visitEnd  
AbstractMethodMutater  
getLastLineNumber
```



AbstractTreeMethodMutater

visitor, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String)

annotationVisitor
string, in visible: boolean): AnnotationVisitor

in nStack: int, in stack: Object)

e: String, in desc: String)
ame: String, in desc: String, in itf: boolean)

bel, in labels: Label)
bels: Label)

andler: Label, in type: String)
signature: String, in start: Label, in end: Label, in index: int)

r)



«Create» +
+ visitAnnotation
+ visitAnnotation
+ visitParameter
+ visitAttribute
+ visitCode
+ visitFrame
+ visitInsn
+ visitIntInsn
+ visitVarInsn
+ visitTypeInsn
+ visitFieldInsn
+ visitMethodInsn
+ visitJumpInsn
+ visitLabel
+ visitLdcInsn
+ visitInsr
+ visitTable
+ visitLookup
+ visitMultiAl
+ visitTryCatc
+ visitLocalVa
+ visitLineNu
+ visitMaxs
«Create» +
+ getLastL

AbstractCo
visitAnnnotation
visitAnnnotation
visitParame
visitAttribut
visitCode
visitFrame
visitInsn
visitIntInsn
visitVarInsn
visitTypeinsn
visitFieldInsn
visitMethod
visitJumpIn
visitLabel
visitLdcInsr
visitInsr
visitTableSv
visitLookup
visitMultiAl
visitTryCatc
visitLocalVa
visitLineNu
visitMaxs
AbstractMe
getLastLine



AbstractCoreMethodMutater

Jumber: int [1]

- AbstractCoreMethodMutater(in mv: MethodVisitor)
annotationDefault(): AnnotationVisitor
annotation(in desc: String, in visible: boolean): AnnotationVisitor
meterAnnotation(in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor
attribute(in attr: Attribute)
e()
ne(in type: int, in nLocal: int, in local: Object, in nStack: int, in stack: Object)
(in opcode: int)
insn(in opcode: int, in operand: int)
insn(in opcode: int, in var: int)
Insn(in opcode: int, in type: String)
IL insn(in opcode: int, in owner: String, in name: String, in desc: String)
hodInsn(in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)
pInsn(in opcode: int, in label: Label)
el(in label: Label)
nsn(in cst: Object)
nsn(in var: int, in increment: int)
eSwitchInsn(in min: int, in max: int, in dflt: Label, in labels: Label)
cupSwitchInsn(in dflt: Label, in keys: int, in labels: Label)
IANewArrayInsn(in desc: String, in dims: int)
atchBlock(in start: Label, in end: Label, in handler: Label, in type: String)
lVariable(in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int)
Number(in line: int, in start: Label)
s(in maxStack: int, in maxLocals: int)
)
- AbstractMethodMutater(in mv: MethodVisitor)
ineNumber(): int

reMethodMutater

tionDefault

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ISwitchInsn

NewArrayInsn

hBlock

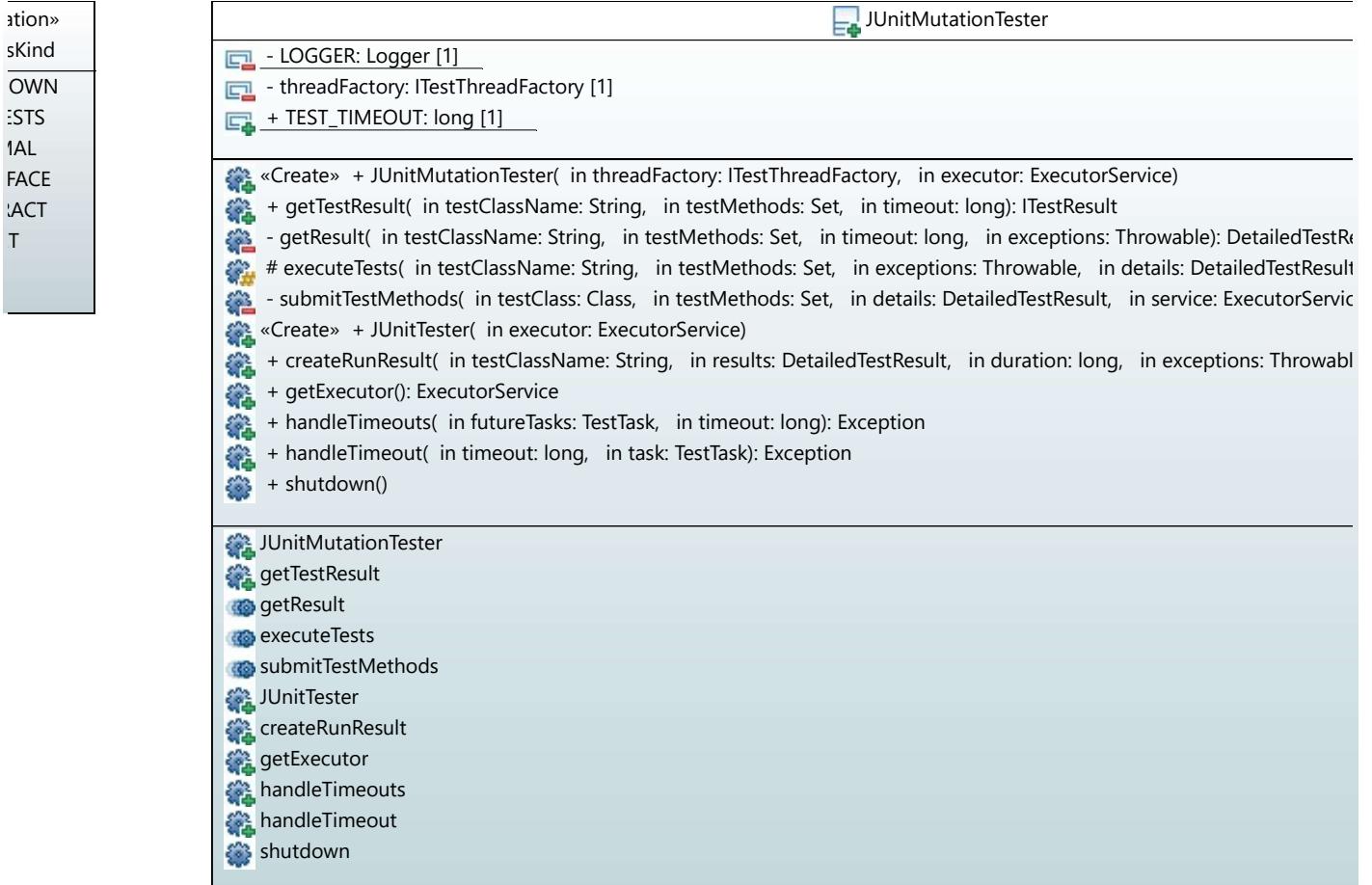
riable

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ethodMutater

Number

«Enumera	Clas:
UNKN	UNKN
NO_TE	NO_TE
NORM	NORM
INTER	INTER
ABSTR	ABSTR
APPLE	APPLE
GUI	GUI



```
result
t, in timeout: long)
:e): TestTask

e): JUnitTestCase
```

- LOGGER: Logger [1]
- threadFactory: ITestThreadFactory [1]
- classLoaderFactory: ICoverageClassLoaderFactory [1]
+ TEST_TIMEOUT: long [1]

«Create» + JUnitCoverageTester(in classLoaderFactory: ICoverageClassLoaderFactory, in thre
+ getTestResult(in testName: String, in testMethods: Set, in timeout: long): ITestResult
- runTestCoverage(in testName: String, in testMethods: Set, in factory: ICoverageClass
executeTests(in testName: String, in testMethods: Set, in factory: ICoverageClassLo
- submitTestMethodsTasks(in testName: String, in testMethods: Set, in factory: ICover
+ getTestResult()
+ getTestResult(in null: <Undefined>)
+ getTestResult(): ITestResult
+ getTestResult(in null: <Undefined>): ITestResult
+ getTestResult(in testName: <Undefined>): ITestResult
+ getTestResult(in testName: String): ITestResult
+ getTestResult(in testName: String, in null: <Undefined>): ITestResult
+ getTestResult(in testName: String, in testMethods: <Undefined>): ITestResult
+ getTestResult(in testName: String, in testMethods: Set): ITestResult
+ getTestResult(in testName: String, in testMethods: Set, in null: <Undefined>): ITestR
+ getTestResult(in testName: String, in testMethods: Set, in timeout: <Undefined>): I
+ shutdown()
«Create» + JUnitTester(in executor: ExecutorService)
+ createRunResult(in testName: String, in results: DetailedTestResult, in duration: long
+ getExecutor(): ExecutorService
+ handleTimeouts(in futureTasks: TestTask, in timeout: long): Exception
+ handleTimeout(in timeout: long, in task: TestTask): Exception
+ shutdown()

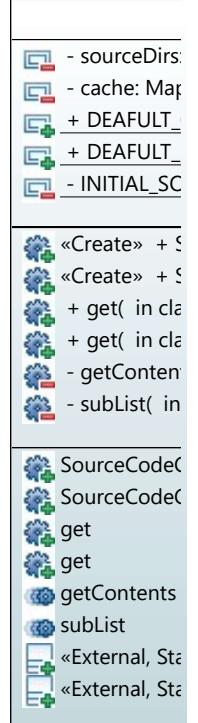
JUnitCoverageTester
getTestResult
runTestCoverage
executeTests
submitTestMethodsTasks
JUnitTester
createRunResult
getExecutor
handleTimeouts
handleTimeout
shutdown

IUnitCoverageTester

```
theadFactory: ITestThreadFactory, in executor: ExecutorService)
:
ClassLoaderFactory, in timeout: long, in exceptions: Throwable): DetailedTestResult
LoaderFactory, in exceptions: Throwable, in details: DetailedTestResult)
ageClassLoaderFactory, in details: DetailedTestResult, in executor: ExecutorService): TestTask
```

```
result
TestResult
```

```
), in exceptions: Throwable): JUnitTestResult
```



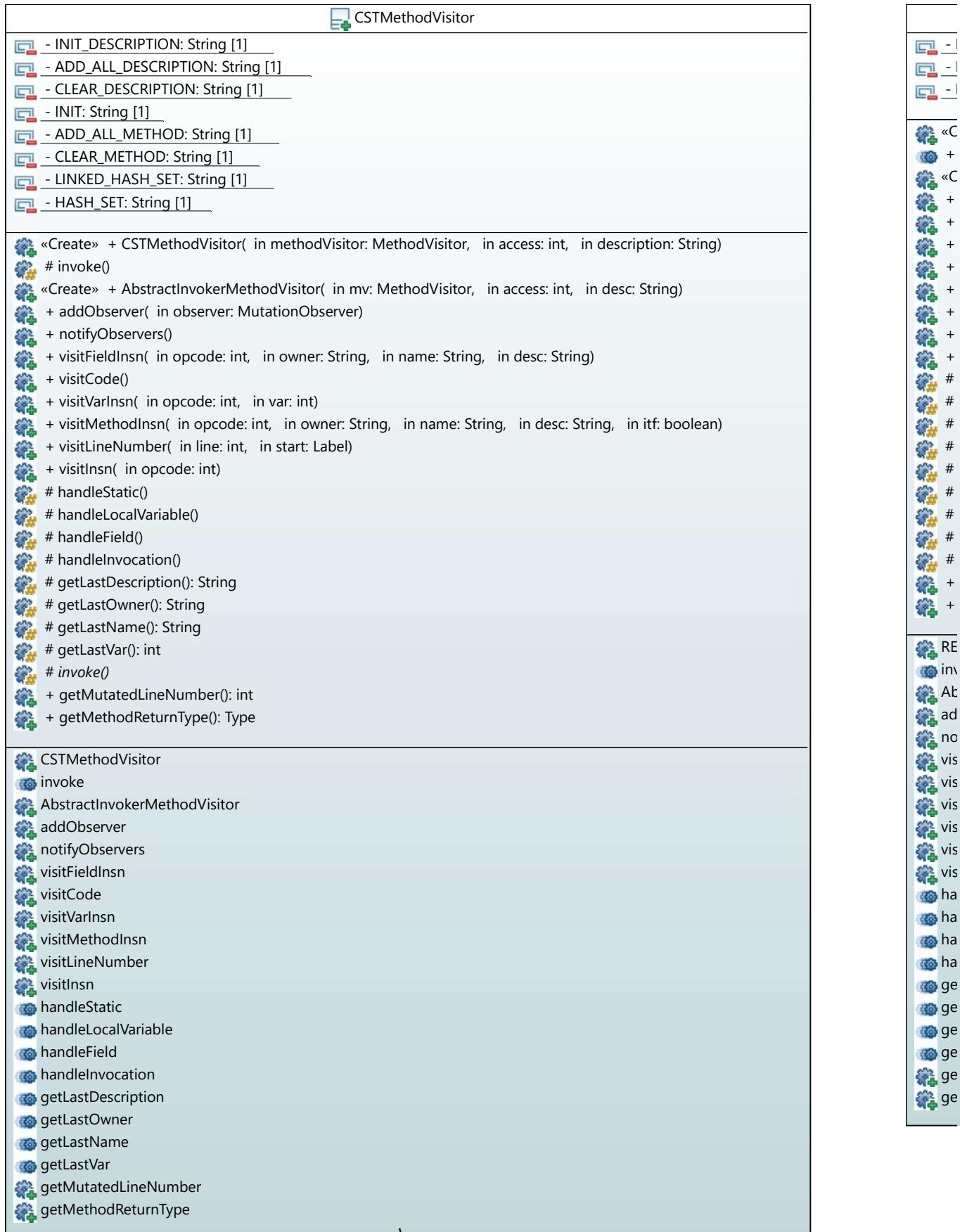
 SourceCodeCache	 ClassUtil
: File [*] > [1] CACHE_SIZE: int [1] LINES_COUNT: int [1] SOURCE_DIRS_SIZE: int [1]	 + getClass(in owner: String): Class  getClass

SourceCodeCache(in workspace: String, in sourcepath: String, in size: int)
SourceCodeCache(in workspace: String, in sourcepath: String)
ClassName: String, in lineNumber: int, in linesCount: int): SourceCode
ClassName: String, in lineNumber: int): SourceCode
ts(in className: String, in file: File, in lineNumber: int, in linesCount: int): Line
list: Line, in lineNumber: int, in linesCount: int): Line

Cache
Cache

staticClassifier» Line
staticClassifier» SourceCode

	 CCEMethodVisitor <hr/> <ul style="list-style-type: none">  - CLEAR_METHOD_RETURN: String [1]  - CLEAR_METHOD: String [1]  - RETURN_TYPE_VERIFIER: TypeVerifier [1] <hr/>
	<pre>  «Create» + CCEMethodVisitor(in mv: MethodVisitor, in access: int, in desc: String)  # invoke()  - getInvokeOpCode(): int  «Create» + AbstractInvokerMethodVisitor(in mv: MethodVisitor, in access: int, in desc: String)  + addObserver(in observer: MutationObserver)  + notifyObservers()  + visitFieldInsn(in opcode: int, in owner: String, in name: String, in desc: String)  + visitCode()  + visitVarInsn(in opcode: int, in var: int)  + visitMethodInsn(in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)  + visitLineNumber(in line: int, in start: Label)  + visitInsn(in opcode: int)  # handleStatic()  # handleLocalVariable()  # handleField()  # handleInvocation()  # getLastDescription(): String  # getLastOwner(): String  # getLastName(): String  # getLastVar(): int  # invoke()  + getMutatedLineNumber(): int  + getMethodReturnType(): Type </pre> <hr/>
	<pre>  CCEMethodVisitor  invoke  getInvokeOpCode  AbstractInvokerMethodVisitor  addObserver  notifyObservers  visitFieldInsn  visitCode  visitVarInsn  visitMethodInsn  visitLineNumber  visitInsn  handleStatic  handleLocalVariable  handleField  handleInvocation  getLastDescription  getLastOwner  getLastName  getLastVar  getMutatedLineNumber  getMethodReturnType </pre>



REVMethodVisitor

REVERSE_METHOD_RETURN: String [1]

REVERSE_METHOD: String [1]

REVERSE_METHOD_CLASS: String [1]

create» + REVMethodVisitor(in mv: MethodVisitor, in access: int, in desc: String)
invoke()
create» + AbstractInvokerMethodVisitor(in mv: MethodVisitor, in access: int, in desc: String)
addObserver(in observer: MutationObserver)
notifyObservers()
visitFieldInsn(in opcode: int, in owner: String, in name: String, in desc: String)
visitCode()
visitVarInsn(in opcode: int, in var: int)
visitMethodInsn(in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)
visitLineNumber(in line: int, in start: Label)
visitInsn(in opcode: int)
handleStatic()
handleLocalVariable()
handleField()
handleInvocation()
getLastDescription(): String
getLastOwner(): String
getLastName(): String
getLastVar(): int
invoke()
getMutatedLineNumber(): int
getMethodReturnType(): Type

VMethodVisitor

voke
stractInvokerMethodVisitor
dObserver
tifyObservers
itFieldInsn
itCode
itVarInsn
itMethodInsn
itLineNumber
itInsn
ndleStatic
ndleLocalVariable
ndleField
ndleInvocation
tLastDescription
tLastOwner
tLastName
tLastVar
tMutatedLineNumber
tMethodReturnType

- SHUFFLE_METHOD
- SHUFFLE_METHOD
- SHUFFLE_METHOD

«Create» + LSFMethodVisitor
+ invoke()
«Create» + Abstra
+ addObserver(ir
+ notifyObservers
+ visitFieldInsn(ir
+ visitCode()
+ visitVarInsn(in op
+ visitMethodInsn
+ visitLineNumber
+ visitInsn(in op
handleStatic()
handleLocalVari
handleField()
handleInvocation
getLastDescripti
getLastOwner():
getLastName():
getLastVar(): int
invoke()
+ getMutatedLine
+ getMethodRetu

LSFMethodVisitor
invoke
AbstractInvokerMe
 addObserver
 notifyObservers
 visitFieldInsn
 visitCode
 visitVarInsn
 visitMethodInsn
 visitLineNumber
 visitInsn
 handleStatic
 handleLocalVariabl
 handleField
 handleInvocation
 getLastDescription
 getLastOwner
 getLastName
 getLastVar
 getMutatedLineNu
 getMethodReturnT



LSFMethodVisitor

DD_DESC: String [1]
DD: String [1]
DD_CLASS: String [1]

thodVisitor(in mv: MethodVisitor, in access: int, in desc: String)

ctInvokerMethodVisitor(in mv: MethodVisitor, in access: int, in desc: String)
 \ observer: MutationObserver)
0
 \ opcode: int, in owner: String, in name: String, in desc: String)

opcode: int, in var: int)
(in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)
(in line: int, in start: Label)
ode: int)

able()

n()
on(): String
String
String

Number(): int
rnType(): Type

ethodVisitor

e

imber
ype

- RANDOM_CONSTRUCTOR_D
- SIZE_DESCRIPTION: String [1]
- NEXT_DESCRIPTION: String [1]
- GET_DESCRIPTION: String [1]
- ADD_DESCRIPTION: String [1]
- RANDOM_CLASS: String [1]
- SIZE_METHOD: String [1]
- INIT: String [1]
- ADD_METHOD: String [1]
- GET_METHOD: String [1]
- NEXT_INT_METHOD: String [1]
- RETURN_TYPE_VERIFIER: Typ

«Create» + DULMethodVisitor
+ invoke()
- getInvokeOpCode(): int
«Create» + AbstractInvokerMe
+ addObserver(in observer: N
+ notifyObservers()
+ visitFieldInsn(in opcode: int
+ visitCode()
+ visitVarInsn(in opcode: int,
+ visitMethodInsn(in opcode:
+ visitLineNumber(in line: int,
+ visitInsn(in opcode: int)
handleStatic()
handleLocalVariable()
handleField()
handleInvocation()
getLastDescription(): String
getLastOwner(): String
getLastName(): String
getLastVar(): int
invoke()
+ getMutatedLineNumber(): ir
+ getMethodReturnType(): Typ

DULMethodVisitor
invoke
getInvokeOpCode
AbstractInvokerMethodVisitor
addObserver
notifyObservers
visitFieldInsn
visitCode
visitVarInsn
visitMethodInsn
visitLineNumber
visitInsn
handleStatic
handleLocalVariable
handleField
handleInvocation
getLastDescription
getLastOwner
getLastName
getLastVar
getMutatedLineNumber
getMethodReturnType

DULMethodVisitor

DESCRIPTION: String [1]

1]

1]

1]

eVerifier [1]

(in mv: MethodVisitor, in access: int, in desc: String)

MethodVisitor(in mv: MethodVisitor, in access: int, in desc: String)
MutationObserver

; in owner: String, in name: String, in desc: String)

in var: int)

: int, in owner: String, in name: String, in desc: String, in ift: boolean)
, in start: Label)

it

oe

- SET_SUFFIX: String [1]
- COMPARATOR_METHOD: String [1]
- COMPARATOR_OBJECT: String [1]
- COMPARATOR_METHOD_DESC: String [1]
- JAVA_UTIL_COLLECTIONS_CLASS: String [1]
- COLLECTION_COMPARATOR_CONSTRUCTOR
- REVERSE_ORDER_METHOD: String [1]
- REVERSE_ORDER_METHOD_DESC: String [1]
- ADD_ALL_METHOD: String [1]
- ADD_ALL_METHOD_DESC: String [1]
- PUT_ALL_METHOD: String [1]
- PUT_ALL_METHOD_DESC: String [1]
- INIT_METHOD: String [1]

«Create» + ORVMMethodVisitor(in mv: Method
handleStatic()
handleLocalVariable()
handleField()
handleInvocation()
+ invoke()
«Create» + AbstractInvokerMethodVisitor(in r
+ addObserver(in observer: MutationObserve
+ notifyObservers()
+ visitFieldInsn(in opcode: int, in owner: Strir
+ visitCode()
+ visitVarInsn(in opcode: int, in var: int)
+ visitMethodInsn(in opcode: int, in owner: \$
+ visitLineNumber(in line: int, in start: Label)
+ visitInsn(in opcode: int)
handleStatic()
handleLocalVariable()
handleField()
handleInvocation()
getLastDescription(): String
getLastOwner(): String
getLastName(): String
getLastVar(): int
invoke()
+ getMutatedLineNumber(): int
+ getMethodReturnType(): Type

ORVMMethodVisitor
handleStatic
handleLocalVariable
handleField
handleInvocation
invoke
AbstractInvokerMethodVisitor
addObserver
notifyObservers
visitFieldInsn
visitCode
visitVarInsn
visitMethodInsn
visitLineNumber
visitInsn
handleStatic
handleLocalVariable
handleField
handleInvocation
getLastDescription

ORVMethodVisitor

DESC: String [1]

IVisitor, in access: int, in desc: String)

nv: MethodVisitor, in access: int, in desc: String)

)

ng, in name: String, in desc: String)

String, in name: String, in desc: String, in itf: boolean)

- av: AnnotationVisitor [1]

«Create» + EmptyVisitor()
+ visitAnnotation(in desc: String, in visible: boolean): Anr
+ visitField(in access: int, in name: String, in desc: String)
+ visitMethod(in access: int, in name: String, in desc: String)

EmptyVisitor
visitAnnotation
visitField
visitMethod

EmptyVisitor

notationVisitor

↳ in signature: String, in value: Object): FieldVisitor
ing, in signature: String, in exceptions: String): MethodVisitor

 + createCoverageTestThread(in factory: ICoverageTestFactory): CoverageTestThread
 + createMutationTestThread(in details: DetailedTestDetails): MutationTestThread

 createCoverageTestThread

 createMutationTestThread



TestThreadFactory

↳ eClassLoaderFactory, in details: DetailedTestResult, in testClass: String, in testMethod: String): CoverageTestThread
↳ estResult, in testClass: Class, in testMethods: Set): TestThread

<p>Timer</p> <ul style="list-style-type: none"> [- generationTime: long [1]] <hr/> <p>«Create» + Timer()</p> <p>+ getDuration(): long</p> <hr/> <p>Timer</p> <p>getDuration</p>	<p>BytecodeCache</p> <ul style="list-style-type: none"> - JAR_EXTENSION: String [1] + DEFAULT_CACHE_SIZE: int [1] - IGNORED: String [*] - urls: List [1] - cache: Map [1] - LOGGER: Logger [1] <hr/> <p>«Create» + BytecodeCache(in size: int, in workspace: String, in classpaths: List)</p> <p>«Create» + BytecodeCache(in workspace: String, in classpath: List)</p> <p>«Create» + BytecodeCache(in size: int, in urls: List)</p> <p>«Create» + BytecodeCache(in urls: List)</p> <p>+ get(in className: String): byte</p> <p>+ getURLs(): URL</p> <p># addURL(in workspace: String, in path: String)</p> <p># loadBytecode(in className: String): byte</p> <p>+ isJarFile(in url: URL): boolean</p> <p>- getPath(in className: String): String</p> <p>+ loadBytecodeFromJar(in className: String, in url: URL): byte</p> <p>- readClassBytecode(in jar: JarFile, in entry: JarEntry): byte</p> <hr/> <p>BytecodeCache</p> <p>BytecodeCache</p> <p>BytecodeCache</p> <p>BytecodeCache</p> <p>BytecodeCache</p> <p>get</p> <p>getURLs</p> <p>addURL</p> <p>loadBytecode</p> <p>isJarFile</p> <p>getPath</p> <p>loadBytecodeFromJar</p> <p>readClassBytecode</p>
---	--

 MutationSummary
<ul style="list-style-type: none"> - killed: int [1] - alive: int [1] - objectives: double [1]
<ul style="list-style-type: none"> «Create» + MutationSummary() «Create» + MutationSummary(in killed: int, in alive: int) + getKilled(): int + setKilled(in killed: int) + getAlive(): int + setAlive(in alive: int) + getAll(): int + getObjectiveValues(): double + setObjectiveValues(in objectives: double)
<ul style="list-style-type: none"> MutationSummary MutationSummary getKilled setKilled getAlive setAlive getAll getObjectiveValues setObjectiveValues

<ul style="list-style-type: none"> - serialVersionUID: long [1] - operatorsNames: String [*] - points: Integer [*] - indexes: LinkedList [1] - linesNumbers: Integer [*] - details: String [1] - operatorsIndexes: Integer [*] - mutantBytecode: IMutantBytecode [1] - id: int [1] - testResults: TestResultList [1] - targetClassName: String [1]
<ul style="list-style-type: none"> «Create» + Mutant(in operatorName: String) «Create» + Mutant(in mutant: IMutant) «Create» + Mutant(in operatorName: String) + addMutation(in line: int, in operator: String) + getOperatorsNames(): String + getMutationPointsIndexes(): Integer + getMutantIndex(): int + getLinesNumbers(): Integer + getDescription(): String + setDescription(in description: String) + getLastOperatorIndex(): int + setBytecode(in bytecode: IMutantBytecode) + getBytecode(): IMutantBytecode + getId(): int + setId(in id: int) + getMutationIndexes(): LinkedList + compareTo(in o: IMutant): int + saveResult(in result: ITestResult) + getResults(): TestResultList + getTargetClassName(): String + getOrder(): int + hashCode(): int + equals(in obj: Object): boolean
<ul style="list-style-type: none"> Mutant Mutant Mutant addMutation getOperatorsNames getMutationPointsIndexes getMutantIndex getLinesNumbers getDescription setDescription getLastOperatorIndex setBytecode getBytecode getId setId getMutationIndexes compareTo saveResult getResults getTargetClassName getOrder hashCode equals

```
g, in point: int, in index: int, in targetClassName: String, in line: int, in details: String, in bytecode: IMutantBytecode, in operatorIndex: int)
g, in point: int, in index: int, in targetClassName: String, in line: int, in operatorIndex: int)
ring, in mutationPoint: int, in mutationIndex: int)

ode)
```

«Interface»



MutationResultFormatter

-  - getSummary(in mutationSummary: MutationSummary, in targetClass: ITargetClass, in kind: ClassKind, in
  - getHeader(): String
  - getWorkObserver(): Observer

```
statistic: IDurationStatistic): String
```

```
[- serialVersionUID: long [1]
[- kind: ClassKind [1]
[- aliveMutants: IMutant [*]
[- killedMutants: IMutant [*]
[- killedCount: int [1]
[- count: int [1]
[- name: String [1]
[- statistic: IDurationStatistic [1]
[- targetClass: ITargetClass [1]
[- summary: String [1]
```

```
«Create» + ClassMutationResult( in name: String, in kind: ClassKind)
«Create» + ClassMutationResult( in name: String, in aliveCount: int, in aliveMutants: IMutant)
«Create» + ClassMutationResult( in name: String, in aliveMutants: IMutant [*])
«Create» + ClassMutationResult( in name: String, in aliveCount: int, in killedCount: int)
«Create» + ClassMutationResult( in name: String, in parts: IClassMutationResult)
«Create» + ClassMutationResult( in kind: ClassKind, in targetClass: ITargetClass)
+ getClassName(): String
+ getAliveMutants(): IMutant
+ getKilledMutants(): IMutant
+ getMutationScore(): double
+ getStatistic(): IDurationStatistic
+ getSummary(): String
+ getClassKind(): ClassKind
+ getKilledMutantsCount(): int
+ getMutantsCount(): int
+ getTargetClass(): ITargetClass
+ getMutants(): IMutant
```

```
ClassMutationResult
ClassMutationResult
ClassMutationResult
ClassMutationResult
ClassMutationResult
ClassMutationResult
getClassName
getAliveMutants
getKilledMutants
getMutationScore
getStatistic
getSummary
getClassKind
getKilledMutantsCount
getMutantsCount
getTargetClass
getMutants
```



ClassMutationResult

```
/eMutants: IMutant, in killedCount: int, in killedMutants: IMutant)  
, in killedMutants: IMutant)  
edCount: int)  
lesultPart)  
Class, in aliveMutants: IMutant, in killedMutants: IMutant, in statistic: IDurationStatistic, in summary: String)
```

MutationWorkFactory

- retries: int [1]
- classpath: String [*]
- testerFactory: ITesterFactory [1]
- operatorsFactory: IMutationOperatorsFactory [1]
- infiniteLoopBreakTime: long [1]
- resultFormatter: MutationResultFormatter [1]

«Create» + MutationWorkFactory(in retries: int, in resultFormatter: MutationResultFormatter, in classpath: String, in testerFactory: ITesterFactory
+ create(in id: long, in targetClass: ITargetClass, in envFactory: IEnvironmentFactory): IWork
- createFromMutationWork(in id: long, in targetClass: ITargetClass, in envFactory: IEnvironmentFactory): IWork

 MutationWorkFactory
 create
 createFromMutationWork

```
factory, in operatorsFactory: IMutationOperatorsFactory, in infiniteLoopBreakTime: long)
```

- retries: int [1]
- classpath: String
- testerFactory
- operatorsFactory
- infiniteLoopBreakTime: long
- resultFormat
- config: HomMutationConfig

«Create» + HomMutationConfig
+ create(in int retries, in String classpath, in IMutationOperatorsFactory operatorsFactory, in long infiniteLoopBreakTime, in String resultFormat, in HomMutationConfig config)
- createOnTheFly()
- createUpFront()
- createNotEquivalent()

HomMutationConfig
create
createOnTheFly()
createUpFront()
createNotEquivalent()

 HomMutationWorkFactory

```
]  
ring [*]  
c ITesterFactory [1]  
tory: IMutationOperatorsFactory [1]  
BreakTime: long [1]  
ter: MutationResultFormatter [1]  
Config [1]
```

```
HomMutationWorkFactory( in retries: int, in resultFormatter: MutationResultFormatter, in classpath: String, in testerFactory: ITesterFactory, in oper:  
l: long, in targetClass: ITargetClass, in envFactory: IEnvironmentFactory): IWork  
FlyHomMutationWork( in id: long, in targetClass: ITargetClass, in envFactory: IEnvironmentFactory): IWork  
ntHomMutationWork( in id: long, in targetClass: ITargetClass, in envFactory: IEnvironmentFactory): IWork  
uivalentHomMutationWork( in id: long, in targetClass: ITargetClass, in envFactory: IEnvironmentFactory): IWork
```

WorkFactory

```
yHomMutationWork  
HomMutationWork  
valentHomMutationWork
```

ctorsFactory: IMutationOperatorsFactory, in infiniteLoopBreakTime: long, in config: HomConfig)



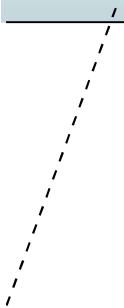
- retries: int [1]
- classpath: String [*]
- testerFactory: ITesterFactory [1]
- operatorsFactory: IMutationOperatorsFactory [1]
- infiniteLoopBreakTime: long [1]
- resultFormatter: MutationResultFormatter [1]
- somGeneratorFactory: ISomGeneratorFactory [1]

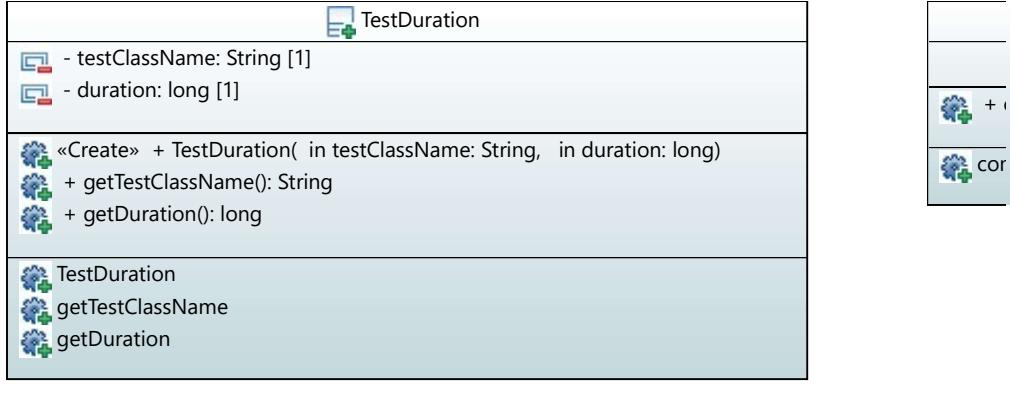
«Create» + SomMutationWorkFactory(in retries: int, in resultFormatter: MutationResultFormatter, in classpath: String, in testerFactory: ITesterFactory, in operatorsFactory: IMutationOperatorsFactory, in infiniteLoopBreakTime: long, in envFactory: IEnvironmentFactory)
+ create(in id: long, in targetClass: ITargetClass, in envFactory: IEnvironmentFactory): IWork

SomMutationWorkFactory
create

SomMutationWorkFactory

erFactory, in operatorsFactory: IMutationOperatorsFactory, in infiniteLoopBreakTime: long, in somGeneratorFactory: ISomGeneratorFactory)





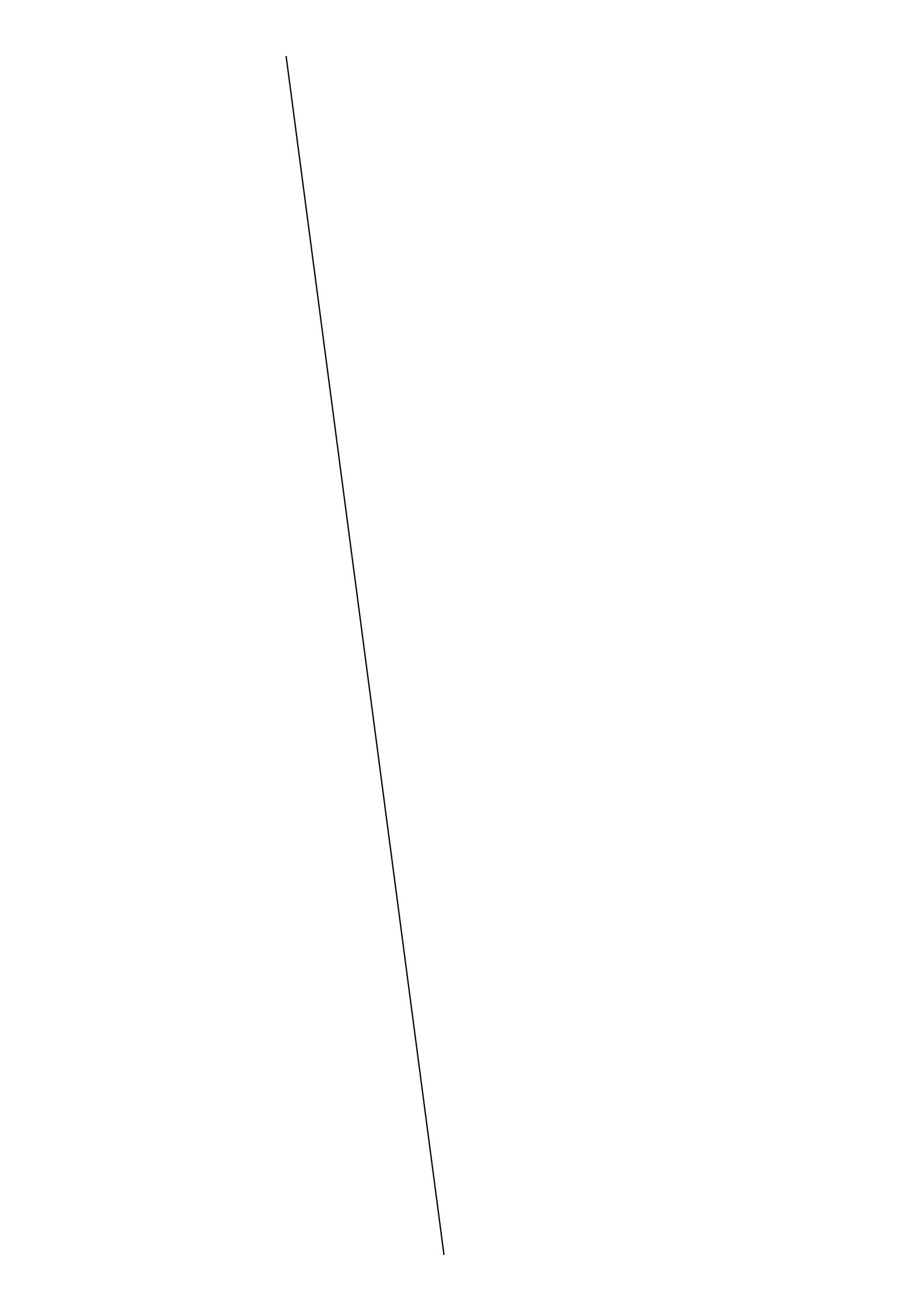


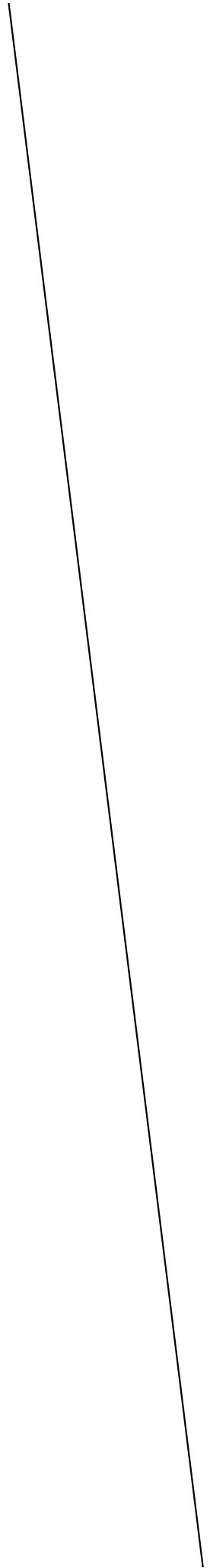
TestDurationComparator

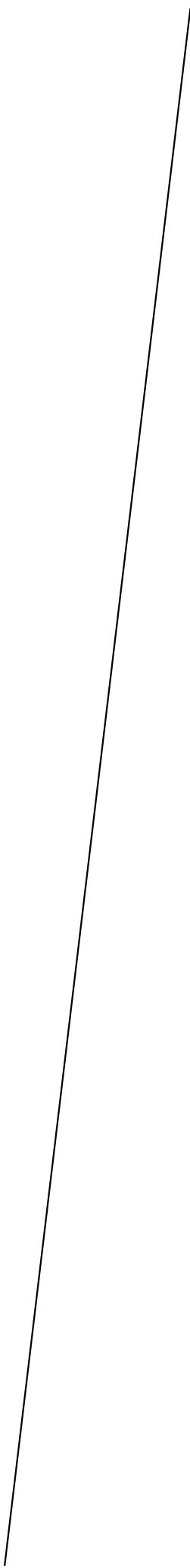
compare(in o1: TestDuration, in o2: TestDuration): int

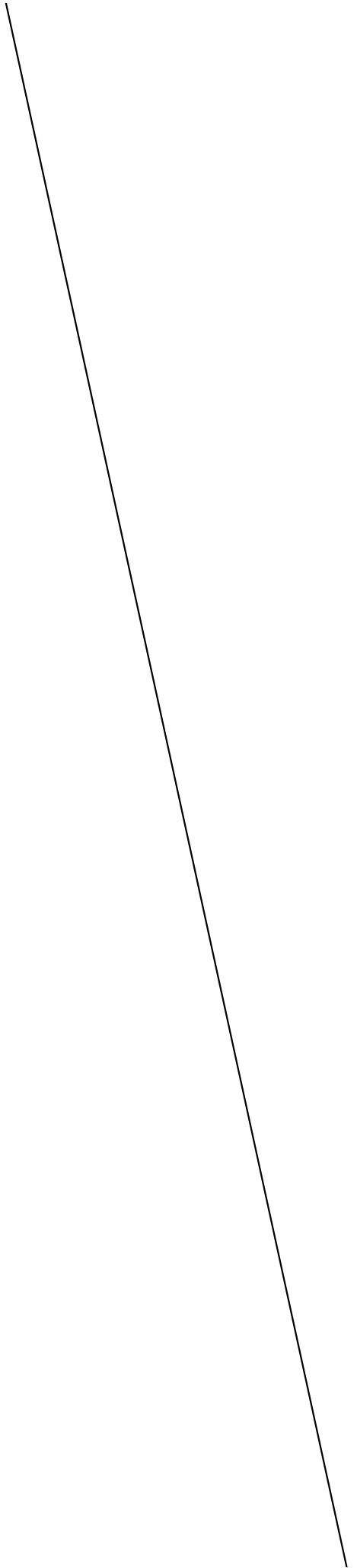
npare

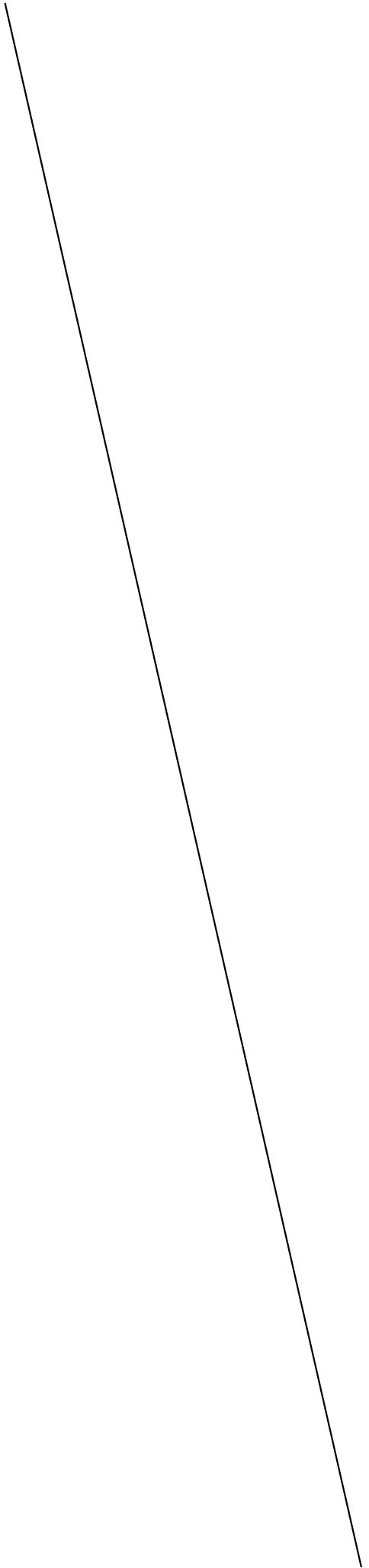
Queue implements IQueue

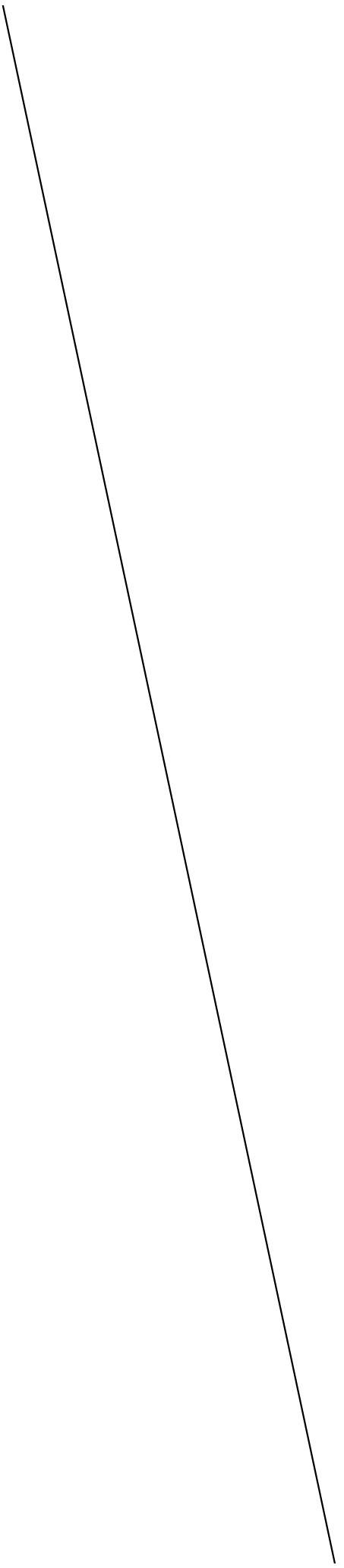


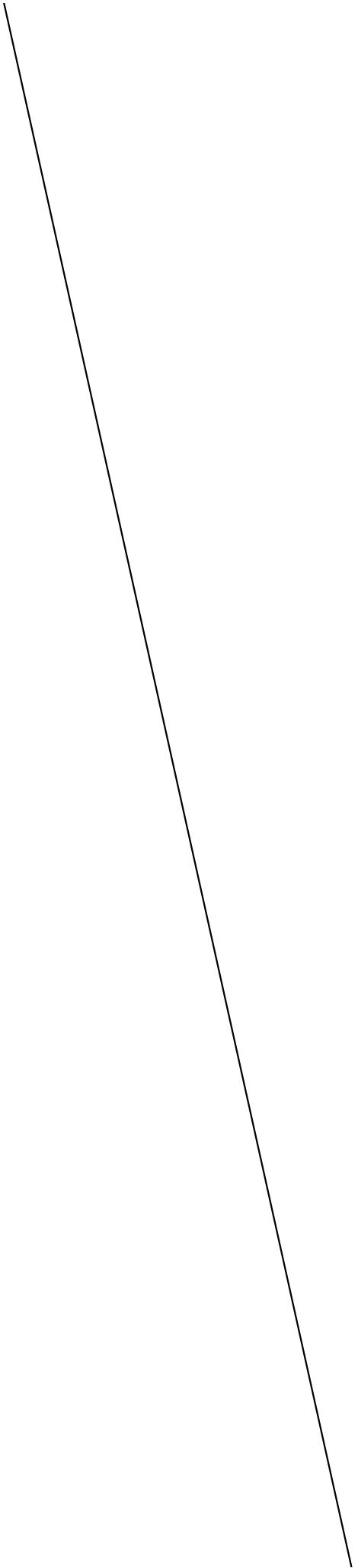


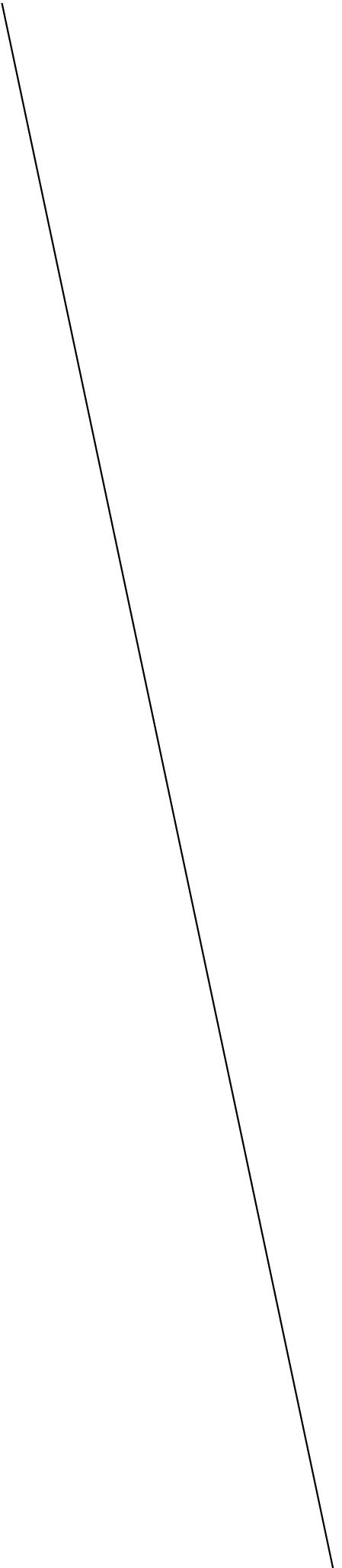


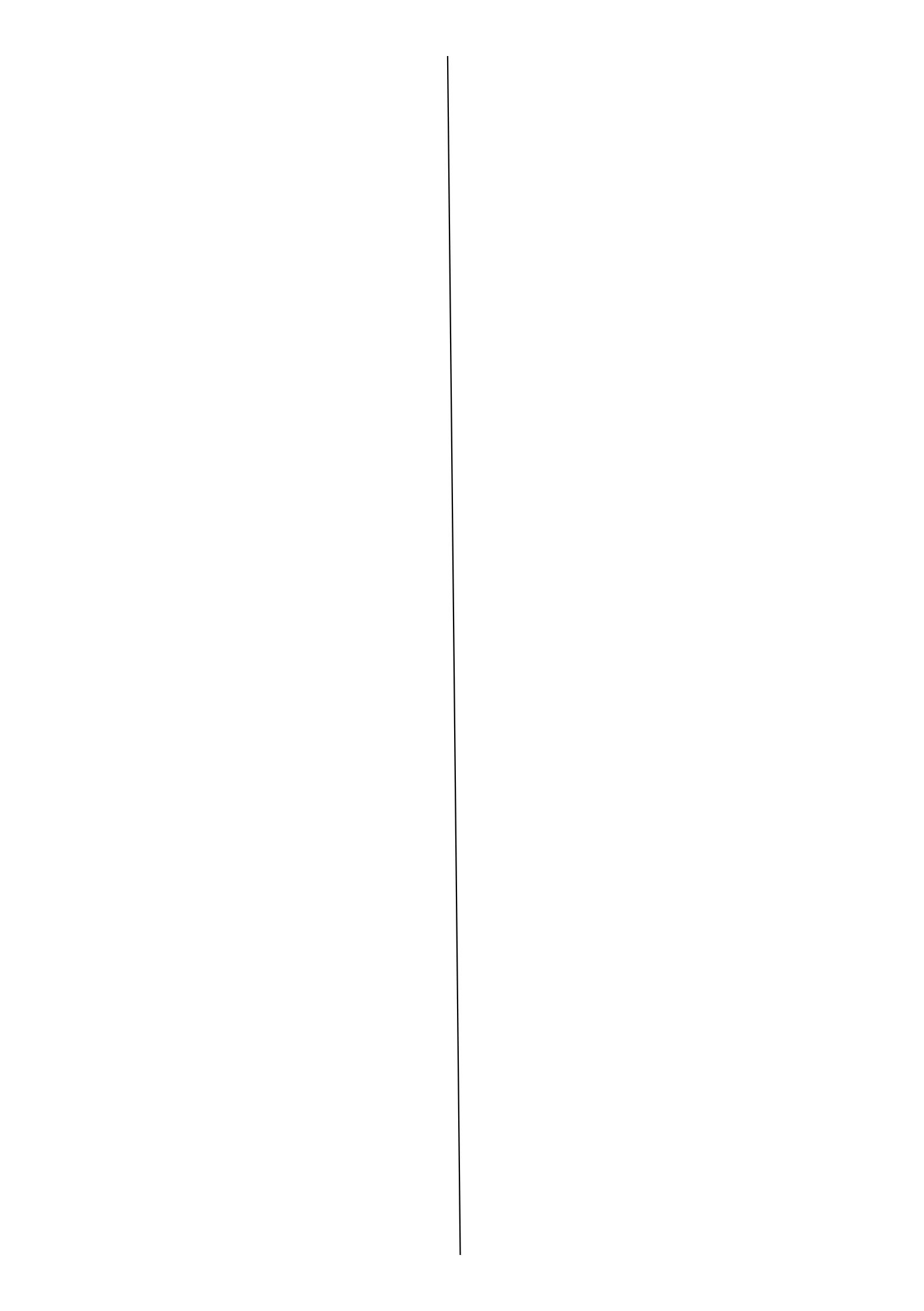












ClassInfoCache implements IClassInfoCache

TargetClass implements ITargetClass

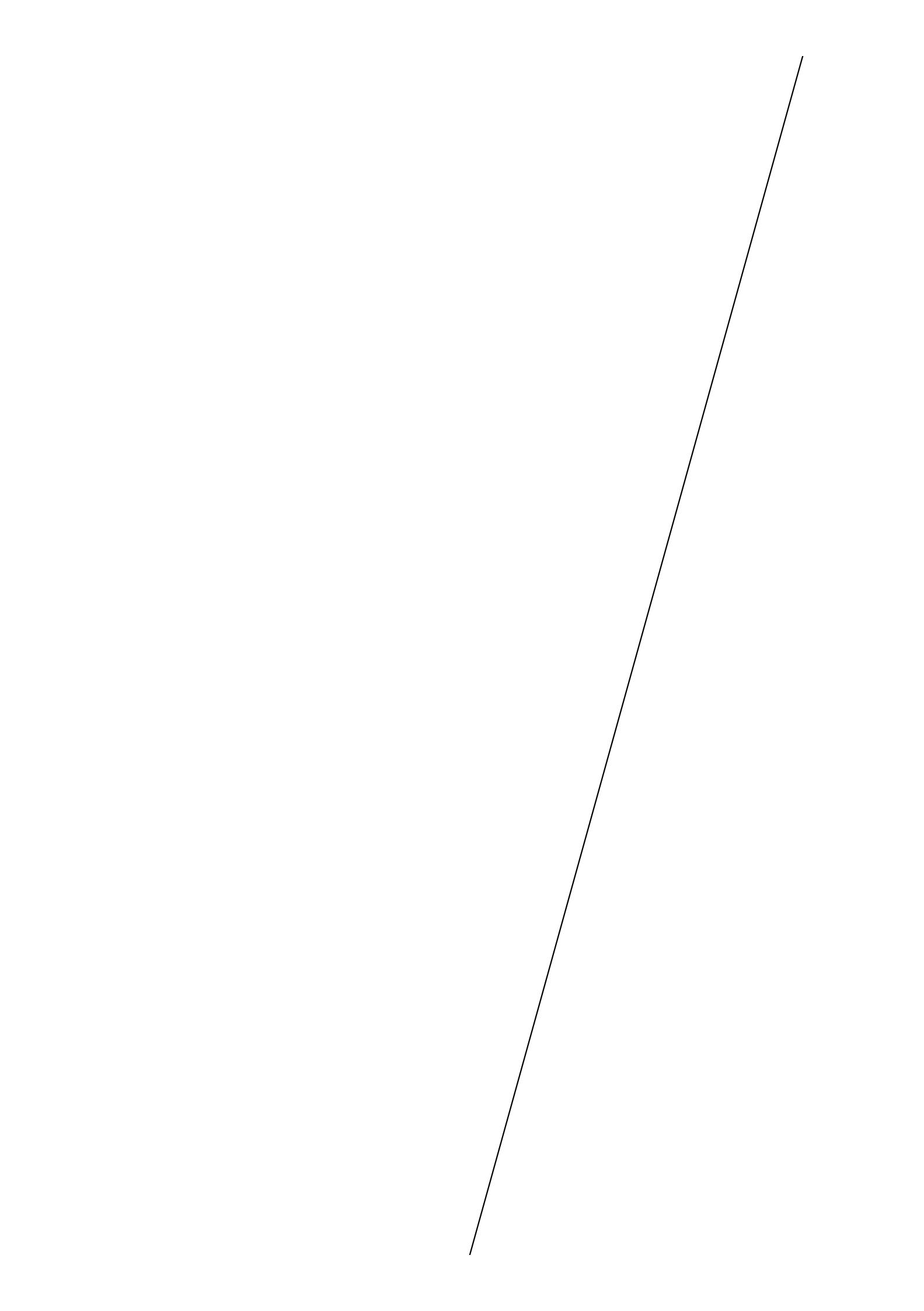
ClassInfo implements IClassInfo

MethodInfo implements IMethodInfo

EnvironmentFactory implements IEnvironmentFactory

MutationClientFactory implements IMutationCli

entFactory



TargetClassesSorter implements ITargetClassesSorter

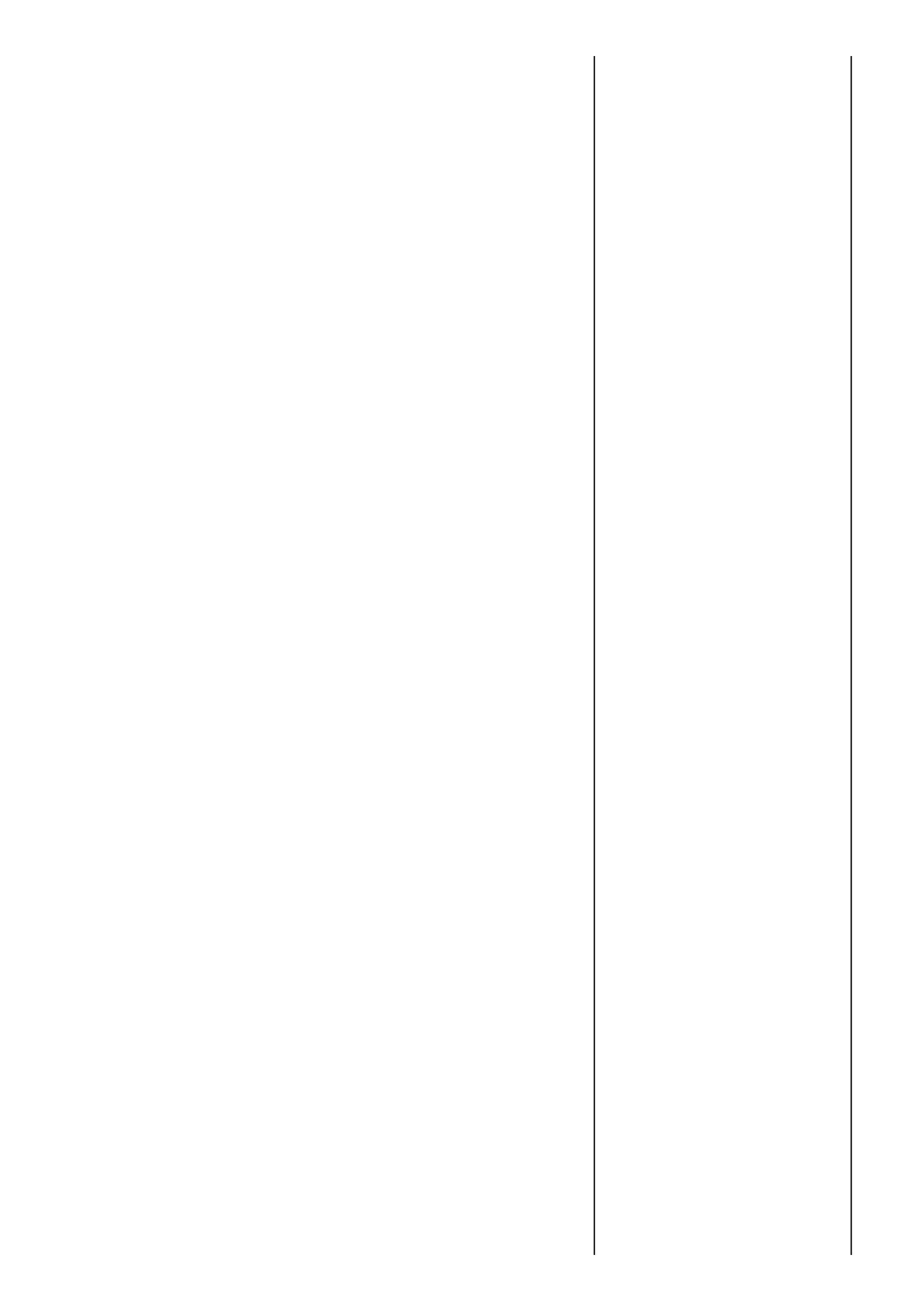
MutationResult implements IMutationResult

ClassHierarchy implements IClassHierarchy

FieldInfo i

implements `IFieldInfo`



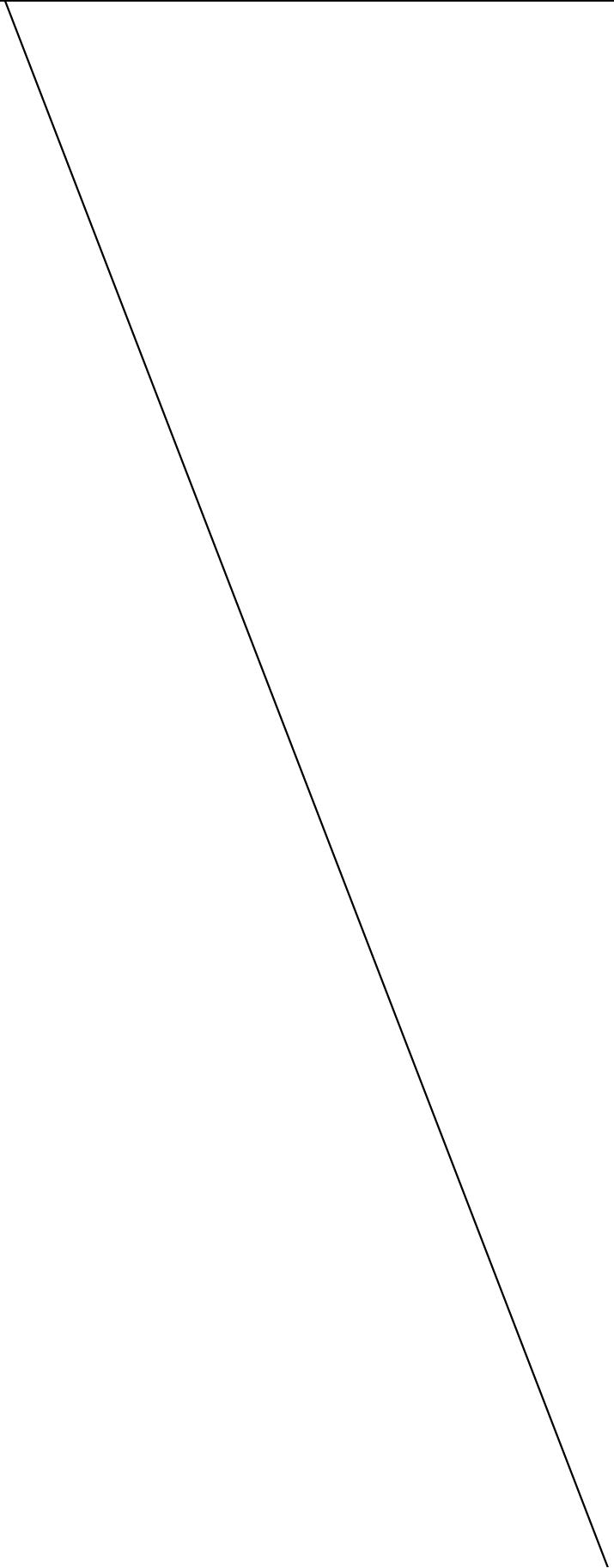


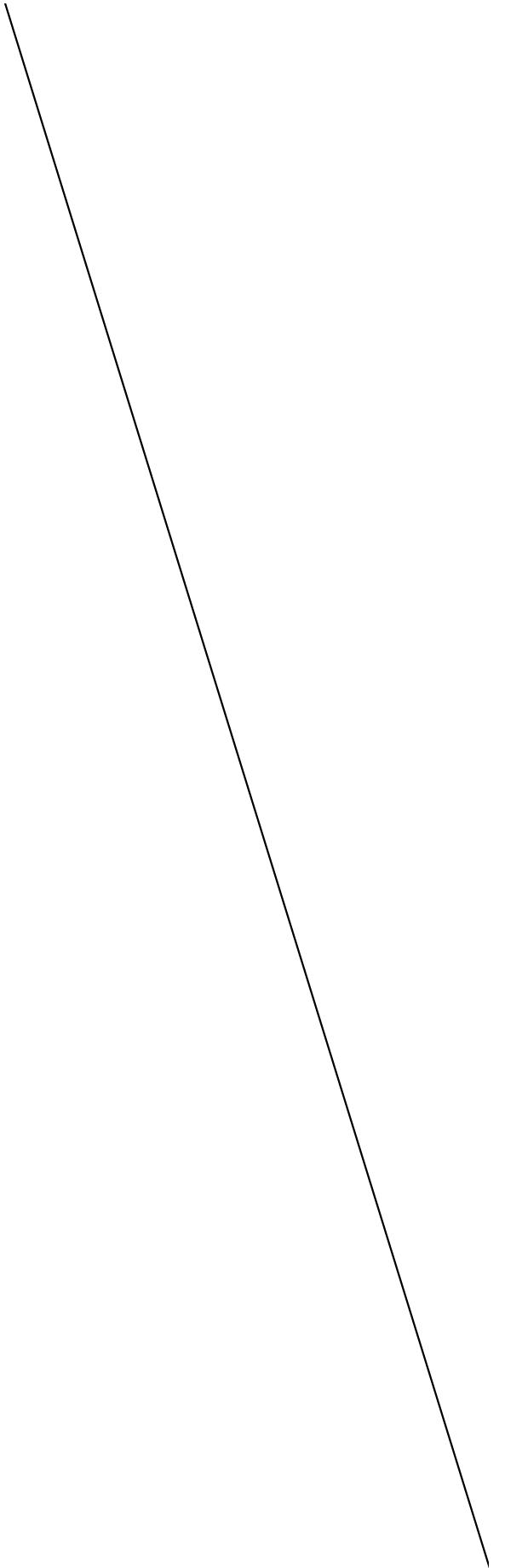
DurationStatistic i

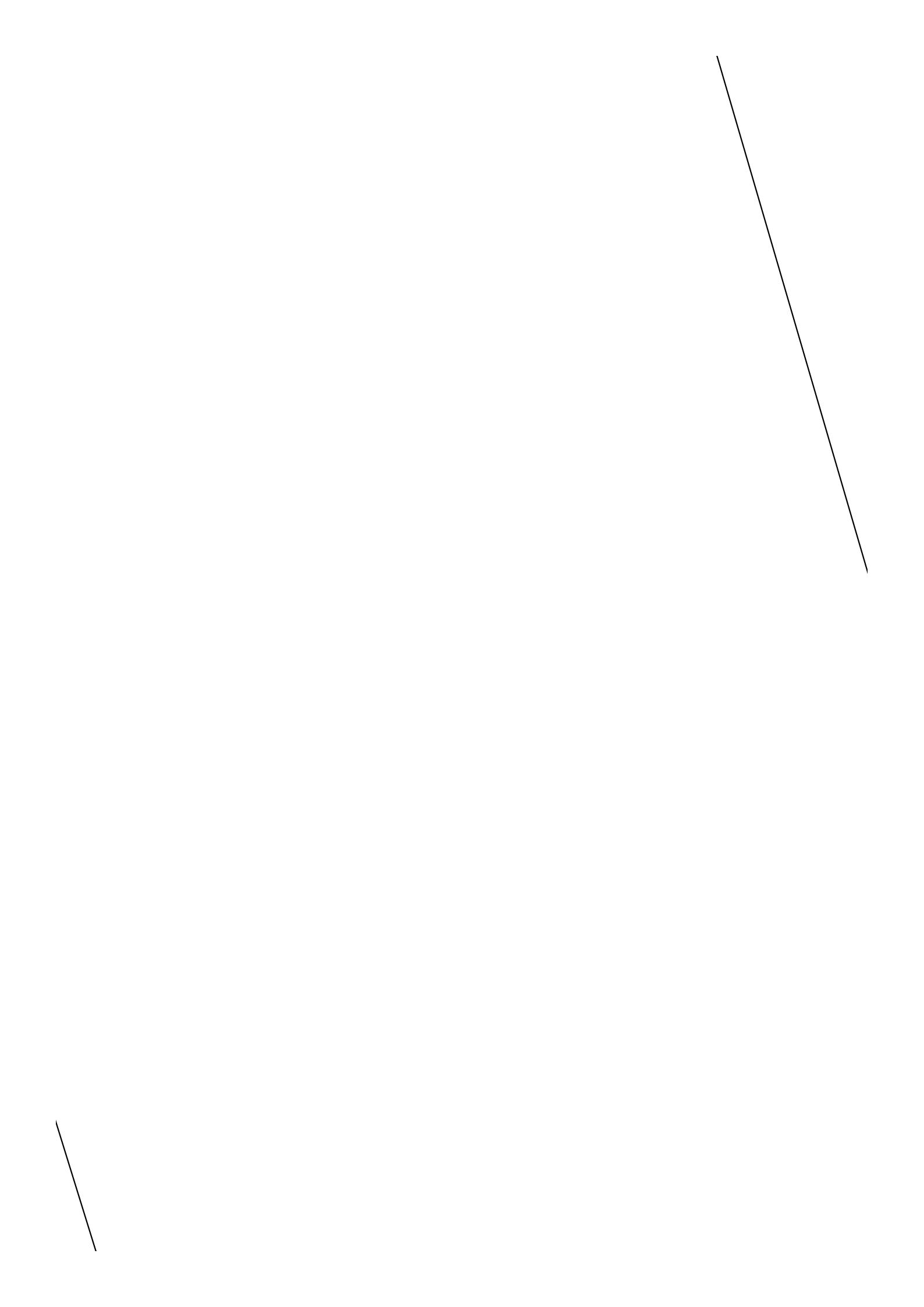
Test implements ITest

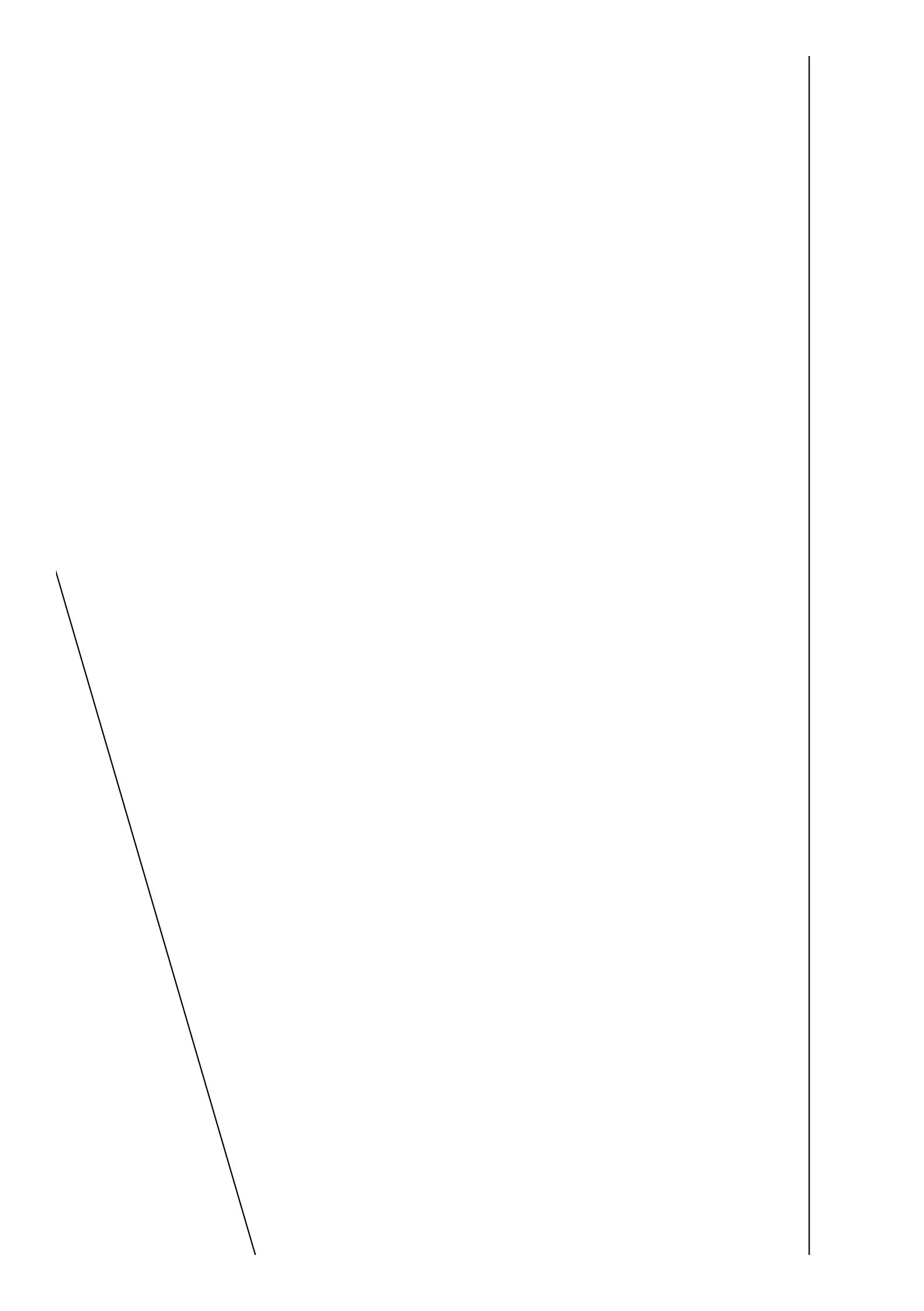
implements IDurationStatistic

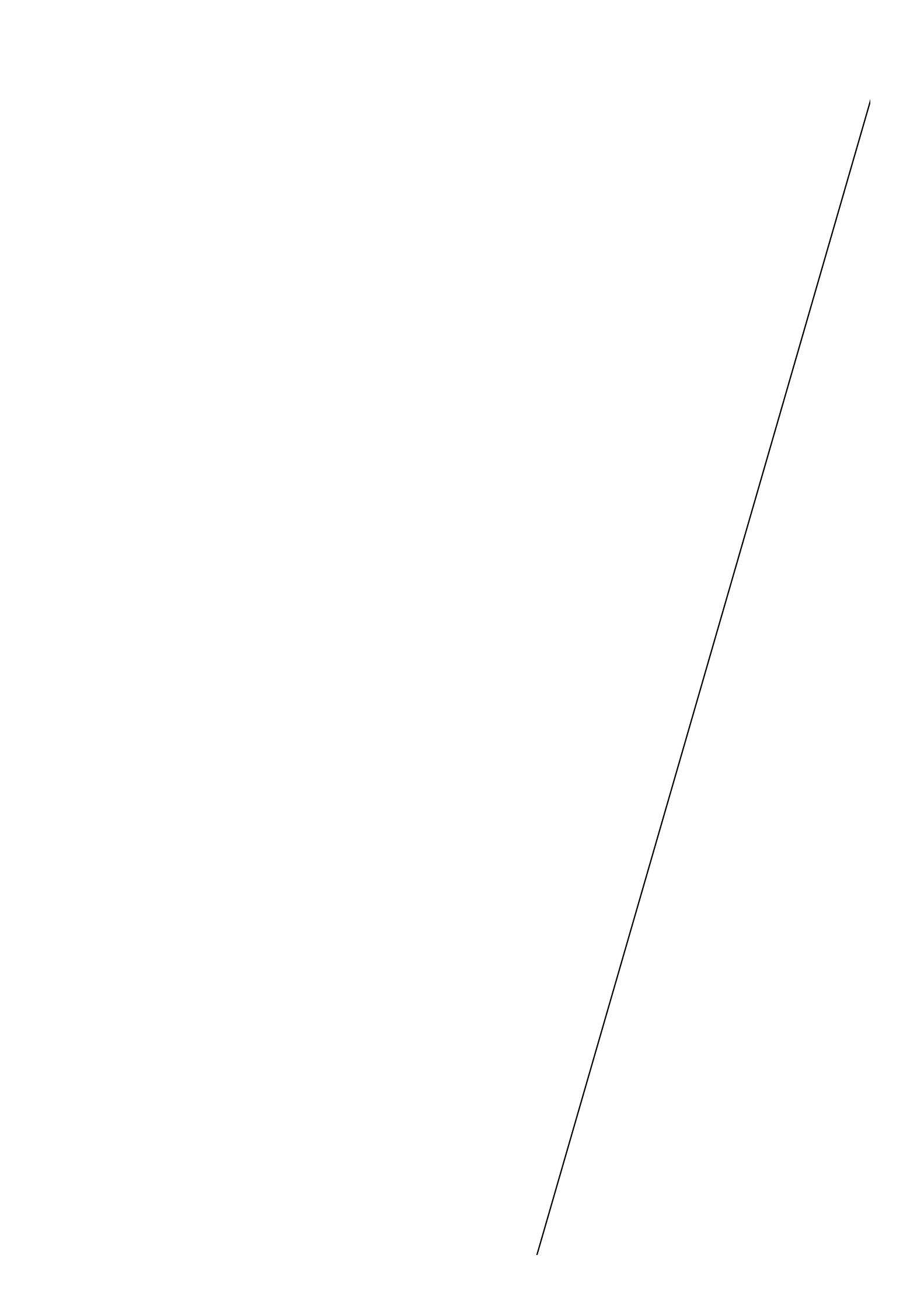








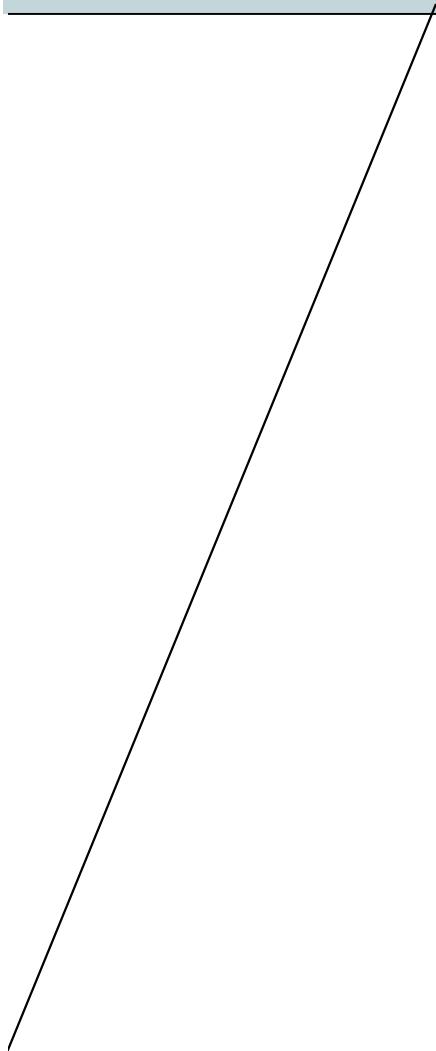


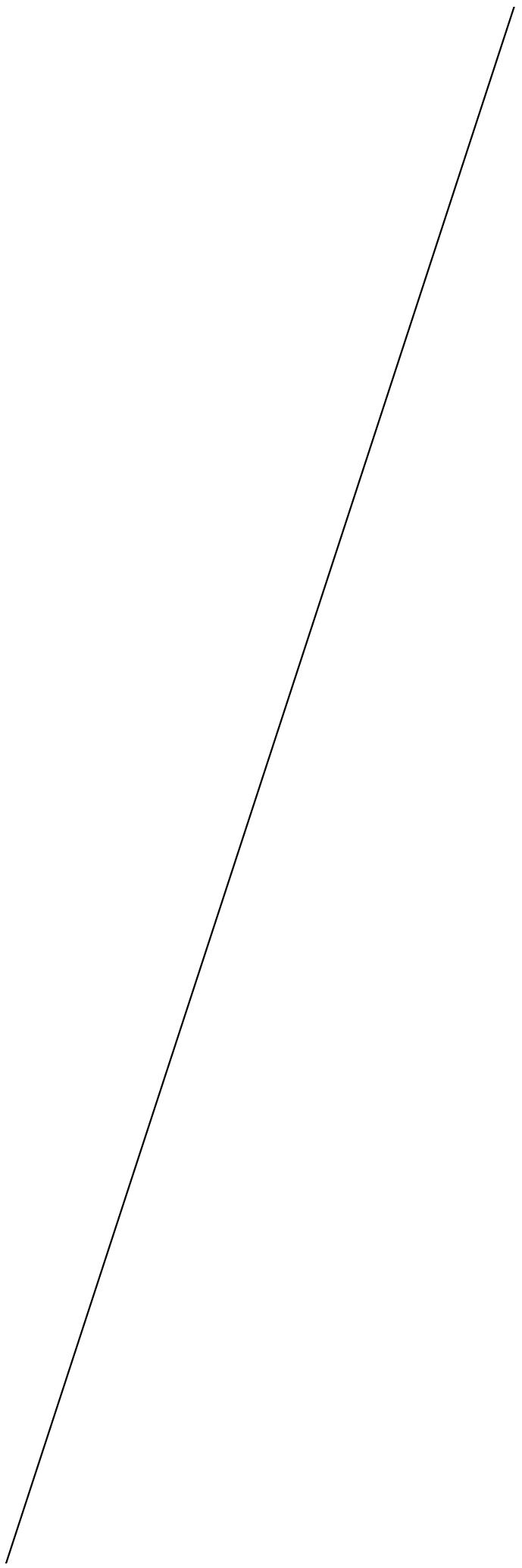


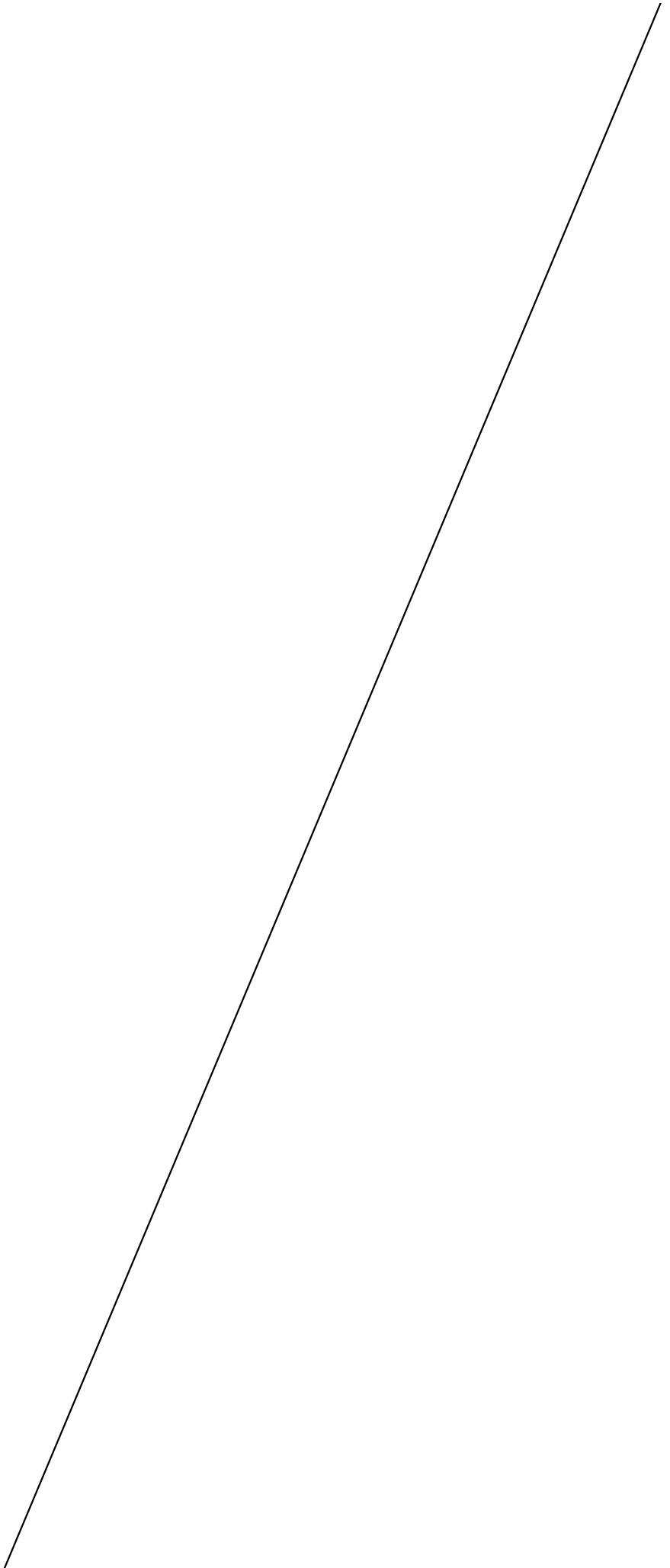


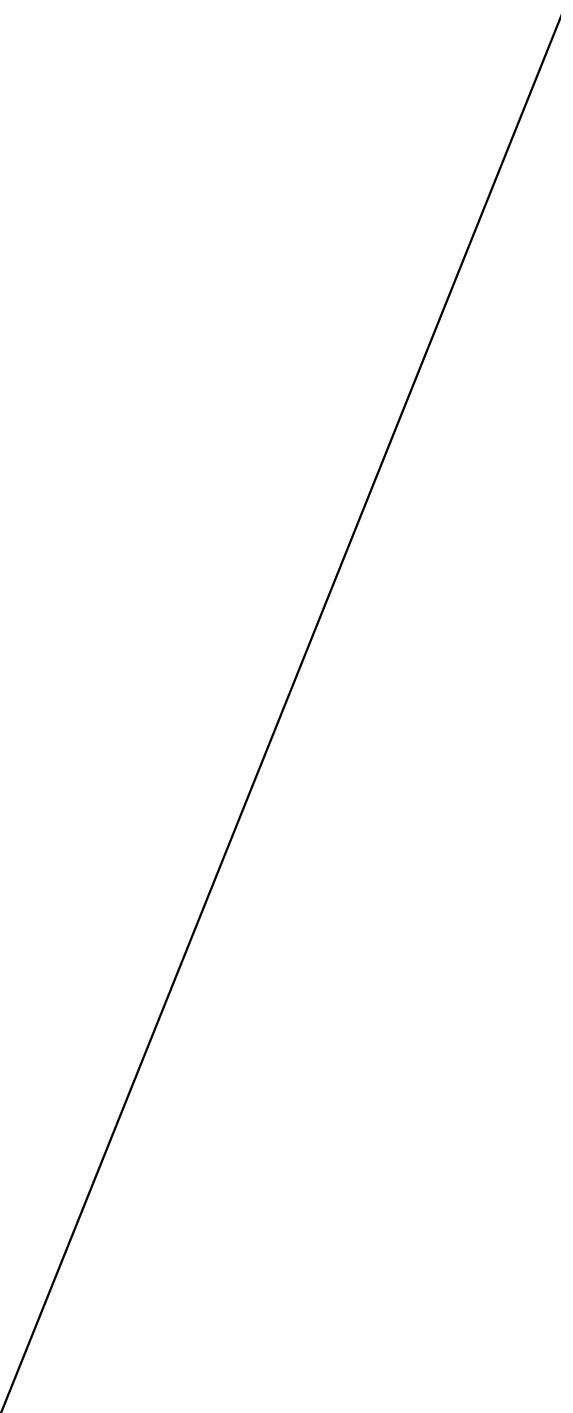
CreateClassWriter

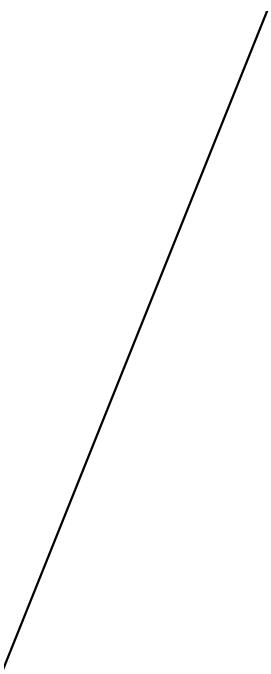
 getReaderFlags
 getWriterFlags
 getName
 getDescription
 setEnvironment
 getEnvironment
 toString
 verify
 trace
 trace











```
+ setEnvironment( in environment.environment)
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor,  in mutationPointIndex: int,  in mutantIndex: int): AbstractClassMutater

getDescription
checkInsn
mutateInsn
createCountingClassMutater
createClassMutater
checkMethod
checkAnnotationDefault
checkAnnotation
checkParameterAnnotation
checkAttribute
checkCode
checkInsn
checkIntInsn
checkVarInsn
checkTypeInsn
checkFieldInsn
checkMethodInsn
checkJumpInsn
checkLabel
checkLdcInsn
checkInclInsn
checkTableSwitchInsn
checkLookupSwitchInsn
checkMultiANewArrayInsn
checkTryCatchBlock
checkLocalVariable
checkEnd
mutateAnnotationDefault
mutateAnnotation
mutateParameterAnnotation
mutateAttribute
mutateCode
mutateInsn
mutateIntInsn
mutateVarInsn
mutateTypeInsn
mutateFieldInsn
mutateMethodInsn
mutateJumpInsn
mutateLabel
mutateLdcInsn
mutateInclInsn
mutateTableSwitchInsn
mutateLookupSwitchInsn
mutateMultiANewArrayInsn
mutateTryCatchBlock
mutateLocalVariable
mutateEnd
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
```

```
+ setEnvironment( in environment.environment)
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIn

getDescription
checkInsn
mutateInsn
createCountingClassMutater
createClassMutater
checkMethod
checkAnnotationDefault
checkAnnotation
checkParameterAnnotation
checkAttribute
checkCode
checkInsn
checkIntInsn
checkVarInsn
checkTypeInsn
checkFieldInsn
checkMethodInsn
checkJumpInsn
checkLabel
checkLdInsn
checkIincInsn
checkTableSwitchInsn
checkLookupSwitchInsn
checkMultiANewArrayInsn
checkTryCatchBlock
checkLocalVariable
checkEnd
mutateAnnotationDefault
mutateAnnotation
mutateParameterAnnotation
mutateAttribute
mutateCode
mutateInsn
mutateIntInsn
mutateVarInsn
mutateTypeInsn
mutateFieldInsn
mutateMethodInsn
mutateJumpInsn
mutateLabel
mutateLdInsn
mutateIincInsn
mutateTableSwitchInsn
mutateLookupSwitchInsn
mutateMultiANewArrayInsn
mutateTryCatchBlock
mutateLocalVariable
mutateEnd
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
```

dex: int): AbstractClassMutater

```
+ setEnvironment(IEnvironment environment)
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater()
# createClassMutater( in class)
getDescription
checkInsn
mutateInsn
createCountingClassMutater
createClassMutater
checkMethod
checkAnnotationDefault
checkAnnotation
checkParameterAnnotation
checkAttribute
checkCode
checkInsn
checkIntInsn
checkVarInsn
checkTypeInsn
checkFieldInsn
checkMethodInsn
checkJumpInsn
checkLabel
checkLdInsn
checkInclInsn
checkTableSwitchInsn
checkLookupSwitchInsn
checkMultiANewArrayInsn
checkTryCatchBlock
checkLocalVariable
checkEnd
mutateAnnotationDefault
mutateAnnotation
mutateParameterAnnotation
mutateAttribute
mutateCode
mutateInsn
mutateIntInsn
mutateVarInsn
mutateTypeInsn
mutateFieldInsn
mutateMethodInsn
mutateJumpInsn
mutateLabel
mutateLdInsn
mutateInclInsn
mutateTableSwitchInsn
mutateLookupSwitchInsn
mutateMultiANewArrayInsn
mutateTryCatchBlock
mutateLocalVariable
mutateEnd
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
```

internal environment
ient

(): AbstractClassMutater

Writer: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater

```
+ setEnvironment(IEnvironment environment)
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutat

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getEnvironment
```

```
+ setEnvironment( in Environment environment)
  # getEnvironment(): IEnvironment
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  # createCountingClassMutater(): AbstractClassMutater
  # createClassMutater( in classWriter: ClassVisitor, in muta
  + getEnvironment()
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  + mutate
  + createClassWriter
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  + getEnvironment
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itionPointIndex: int, in mutantIndex: int): AbstractClassMutater



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+ setEnvironment( in environment.environment)
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor,  in mutationPointIndex: int,  in mutantIndex: int): AbstractClassMutater

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```
+ setEnvironment( in environment.environment)
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+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIn

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dex: int): AbstractClassMutater
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```
+ setEnvironment in Environment
  # getEnvironment(): IEnvironment
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  # createCountingClassMutater
  # createClassMutater( in class)

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(): AbstractClassMutater

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+ getSimpleName(): String
+ getDescription(): String
+ setEnvironment( in environment: IEnvironment)
# getEnvironment(): IEnvironment
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# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutat


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```
+ getSimpleName(): String
+ getDescription(): String
+ setEnvironment( in environment: IEnvironment)
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+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutator: ClassMutator)
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itionPointIndex: int, in mutantIndex: int): AbstractClassMutater



```
+ getUsername(): String
+ getDescription(): String
+ setEnvironment( in environment: IEnvironment)
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor,  in mutationPointIndex: int,  in mutantIndex: int): AbstractClassMutater
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```
+ setEnvironment( in environment.environment)
# getEnvironment(): IEnvironment
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# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIn

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+ setEnvironment(IEnvironment environment)
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+ toString(): String
# createCountingClassMutater()
# createClassMutater( in class)

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(): AbstractClassMutater

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+ setEnvironment( in environment.Environment)
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 # createCountingClassMutater(): AbstractClassMutater
 # createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutat


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# createCountingClassMutater(): AbstractClassMutater
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itionPointIndex: int, in mutantIndex: int): AbstractClassMutater



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+ setEnvironment( IEnvironment environment )
+ getEnvironment(): IEnvironment
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# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater

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+ setEnvironment( in environment.environment)
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+ setEnvironment(IEnvironment environment)
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(): AbstractClassMutater

Writer: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater

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+ setEnvironment( IEnvironment environment)
 # getEnvironment(): IEnvironment
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# createClassMutater( in classWriter: ClassVisitor, in mutator: ClassMutator)
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ationPointIndex: int, in mutantIndex: int): AbstractClassMutater

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+ setEnvironment(IEnvironment environment)
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+ setEnvironment(IEnvironment environment)
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# createCountingClassMutater(): AbstractClassMutater
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mutateAnnotation
mutateParameterAnnotation
mutateAttribute
mutateCode
mutateInsn
mutateIntInsn
mutateVarInsn
mutateTypeInsn
mutateFieldInsn
mutateMethodInsn
mutateJumpInsn
mutateLabel
mutateLdInsn
mutateLineInsn
mutateTableSwitchInsn
mutateLookupSwitchInsn
mutateMultiANewArrayInsn
mutateTryCatchBlock
mutateLocalVariable
mutateEnd
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
```

index: int): AbstractClassMutater

```
+ setEnvironment in Environment
# getEnvironment(): Environment
+ toString(): String
# createCountingClassMutater
# createClassMutater() in class

getDescription
checkInsn
mutateInsn
createCountingClassMutater
createClassMutater
checkMethod
checkAnnotationDefault
checkAnnotation
checkParameterAnnotation
checkAttribute
checkCode
checkInsn
checkIntInsn
checkVarInsn
checkTypeInsn
checkFieldInsn
checkMethodInsn
checkJumpInsn
checkLabel
checkLdInsn
checkLineInsn
checkTableSwitchInsn
checkLookupSwitchInsn
checkMultiANewArrayInsn
checkTryCatchBlock
checkLocalVariable
checkEnd
mutateAnnotationDefault
mutateAnnotation
mutateParameterAnnotation
mutateAttribute
mutateCode
mutateInsn
mutateIntInsn
mutateVarInsn
mutateTypeInsn
mutateFieldInsn
mutateMethodInsn
mutateJumpInsn
mutateLabel
mutateLdInsn
mutateLineInsn
mutateTableSwitchInsn
mutateLookupSwitchInsn
mutateMultiANewArrayInsn
mutateTryCatchBlock
mutateLocalVariable
mutateEnd
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
```

internal environment

ment

r0: AbstractClassMutater

;Writer: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater

```
+ setEnvironment( IEnvironment environment)
  # getEnvironment(): IEnvironment
  + toString(): String
  # createCountingClassMutater(): AbstractClassMutater
  # createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutator

  getDescription
  createClassMutater
  createCountingClassMutater
  ClassMutater
  createCountingClassMutater
  createClassMutater
  checkMethod
  checkAnnotationDefault
  checkAnnotation
  checkParameterAnnotation
  checkAttribute
  checkCode
  checkInsn
  checkIntInsn
  checkVarInsn
  checkTypeInsn
  checkFieldInsn
  checkMethodInsn
  checkJumpInsn
  checkLabel
  checkLdcInsn
  checkLineInsn
  checkTableSwitchInsn
  checkLookupSwitchInsn
  checkMultiANewArrayInsn
  checkTryCatchBlock
  checkLocalVariable
  checkEnd
  mutateAnnotationDefault
  mutateAnnotation
  mutateParameterAnnotation
  mutateAttribute
  mutateCode
  mutateInsn
  mutateIntInsn
  mutateVarInsn
  mutateTypeInsn
  mutateFieldInsn
  mutateMethodInsn
  mutateJumpInsn
  mutateLabel
  mutateLdcInsn
  mutateLineInsn
  mutateTableSwitchInsn
  mutateLookupSwitchInsn
  mutateMultiANewArrayInsn
  mutateTryCatchBlock
  mutateLocalVariable
  mutateEnd
  getMutationPoints
  mutate
  mutate
  mutate
  createClassWriter
  getReaderFlags
  getWriterFlags
  getName
  getDescription
  setEnvironment
```

```
+ getDescription(): String
+ setEnvironment( in environment: IEnvironment)
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mut

getDescription
checkMethod
checkInsn
mutateInsn
createCountingClassMutater
createClassMutater
checkMethod
checkAnnotationDefault
checkAnnotation
checkParameterAnnotation
checkAttribute
checkCode
checkInsn
checkIntInsn
checkVarInsn
checkTypeInsn
checkFieldInsn
checkMethodInsn
checkJumpInsn
checkLabel
checkLdInsn
checkLineInsn
checkTableSwitchInsn
checkLookupSwitchInsn
checkMultiANewArrayInsn
checkTryCatchBlock
checkLocalVariable
checkEnd
mutateAnnotationDefault
mutateAnnotation
mutateParameterAnnotation
mutateAttribute
mutateCode
mutateInsn
mutateIntInsn
mutateVarInsn
mutateTypeInsn
mutateFieldInsn
mutateMethodInsn
mutateJumpInsn
mutateLabel
mutateLdInsn
mutateLineInsn
mutateTableSwitchInsn
mutateLookupSwitchInsn
mutateMultiANewArrayInsn
mutateTryCatchBlock
mutateLocalVariable
mutateEnd
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
```

ationPointIndex: int, in mutantIndex: int): AbstractClassMutater



```
+ setEnvironment( in Environment environment)
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor,  in mutationPointIndex: int,  in mutantIndex: int): AbstractClassMutater

getDescription
checkMethodInsn
mutateMethodInsn
createCountingClassMutater
createClassMutater
checkMethod
checkAnnotationDefault
checkAnnotation
checkParameterAnnotation
checkAttribute
checkCode
checkInsn
checkIntInsn
checkVarInsn
checkTypeInsn
checkFieldInsn
checkMethodInsn
checkJumpInsn
checkLabel
checkLdclInsn
checkLinInsn
checkTableSwitchInsn
checkLookupSwitchInsn
checkMultiANewArrayInsn
checkTryCatchBlock
checkLocalVariable
checkEnd
mutateAnnotationDefault
mutateAnnotation
mutateParameterAnnotation
mutateAttribute
mutateCode
mutateInsn
mutateIntInsn
mutateVarInsn
mutateTypeInsn
mutateFieldInsn
mutateMethodInsn
mutateJumpInsn
mutateLabel
mutateLdclInsn
mutateLinInsn
mutateTableSwitchInsn
mutateLookupSwitchInsn
mutateMultiANewArrayInsn
mutateTryCatchBlock
mutateLocalVariable
mutateEnd
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
```

```
+ setEnvironment( IEnvironment environment )  
# getEnvironment(): IEnvironment  
+ toString(): String  
# createCountingClassMutater(): AbstractClassMutater  
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantl  
  
getDescription  
checkInsn  
mutateInsn  
createCountingClassMutater  
createClassMutater  
checkMethod  
checkAnnotationDefault  
checkAnnotation  
checkParameterAnnotation  
checkAttribute  
checkCode  
checkInsn  
checkIntInsn  
checkVarInsn  
checkTypeInsn  
checkFieldInsn  
checkMethodInsn  
checkJumpInsn  
checkLabel  
checkLdcInsn  
checkLineInsn  
checkTableSwitchInsn  
checkLookupSwitchInsn  
checkMultiANewArrayInsn  
checkTryCatchBlock  
checkLocalVariable  
checkEnd  
mutateAnnotationDefault  
mutateAnnotation  
mutateParameterAnnotation  
mutateAttribute  
mutateCode  
mutateInsn  
mutateIntInsn  
mutateVarInsn  
mutateTypeInsn  
mutateFieldInsn  
mutateMethodInsn  
mutateJumpInsn  
mutateLabel  
mutateLdcInsn  
mutateLineInsn  
mutateTableSwitchInsn  
mutateLookupSwitchInsn  
mutateMultiANewArrayInsn  
mutateTryCatchBlock  
mutateLocalVariable  
mutateEnd  
getMutationPoints  
mutate  
mutate  
mutate  
createClassWriter  
getReaderFlags  
getWriterFlags  
getName  
getDescription  
setEnvironment  
getEnvironment
```

```
ndex: int): AbstractClassMutater
```

```
+ setEnvironment in Environment
  # getEnvironment(): IEnvironment
  + toString(): String
  # createCountingClassMutater
  # createClassMutater( in class)
  + getEnvironment
  + setDescription
  + checkInsn
  + mutateInsn
  + createCountingClassMutater
  + createClassMutater
  + checkMethod
  + checkAnnotationDefault
  + checkAnnotation
  + checkParameterAnnotation
  + checkAttribute
  + checkCode
  + checkInsn
  + checkIntInsn
  + checkVarInsn
  + checkTypeInsn
  + checkFieldInsn
  + checkMethodInsn
  + checkJumpInsn
  + checkLabel
  + checkLdcInsn
  + checkLineInsn
  + checkTableSwitchInsn
  + checkLookupSwitchInsn
  + checkMultiANewArrayInsn
  + checkTryCatchBlock
  + checkLocalVariable
  + checkEnd
  + mutateAnnotationDefault
  + mutateAnnotation
  + mutateParameterAnnotation
  + mutateAttribute
  + mutateCode
  + mutateInsn
  + mutateIntInsn
  + mutateVarInsn
  + mutateTypeInsn
  + mutateFieldInsn
  + mutateMethodInsn
  + mutateJumpInsn
  + mutateLabel
  + mutateLdcInsn
  + mutateLineInsn
  + mutateTableSwitchInsn
  + mutateLookupSwitchInsn
  + mutateMultiANewArrayInsn
  + mutateTryCatchBlock
  + mutateLocalVariable
  + mutateEnd
  + getMutationPoints
  + mutate
  + mutate
  + mutate
  + createClassWriter
  + getReaderFlags
  + getWriterFlags
  + getName
  + getDescription
  + setEnvironment
  + getEnvironment
```

ment

r(): AbstractClassMutater

sWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater

```
+ setEnvironment( in environment.environment)
  # getEnvironment(): IEnvironment
  + toString(): String
  # createCountingClassMutater(): AbstractClassMutater
  # createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutator

getDescription
checkInsn
mutateInsn
createCountingClassMutater
createClassMutater
checkMethod
checkAnnotationDefault
checkAnnotation
checkParameterAnnotation
checkAttribute
checkCode
checkInsn
checkIntInsn
checkVarInsn
checkTypeInsn
checkFieldInsn
checkMethodInsn
checkJumpInsn
checkLabel
checkLdcInsn
checkInclInsn
checkTableSwitchInsn
checkLookupSwitchInsn
checkMultiANewArrayInsn
checkTryCatchBlock
checkLocalVariable
checkEnd
mutateAnnotationDefault
mutateAnnotation
mutateParameterAnnotation
mutateAttribute
mutateCode
mutateInsn
mutateIntInsn
mutateVarInsn
mutateTypeInsn
mutateFieldInsn
mutateMethodInsn
mutateJumpInsn
mutateLabel
mutateLdcInsn
mutateInclInsn
mutateTableSwitchInsn
mutateLookupSwitchInsn
mutateMultiANewArrayInsn
mutateTryCatchBlock
mutateLocalVariable
mutateEnd
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
```

```
+ setEnvironment( IEnvironment environment )
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutator: ClassMutator )
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
```

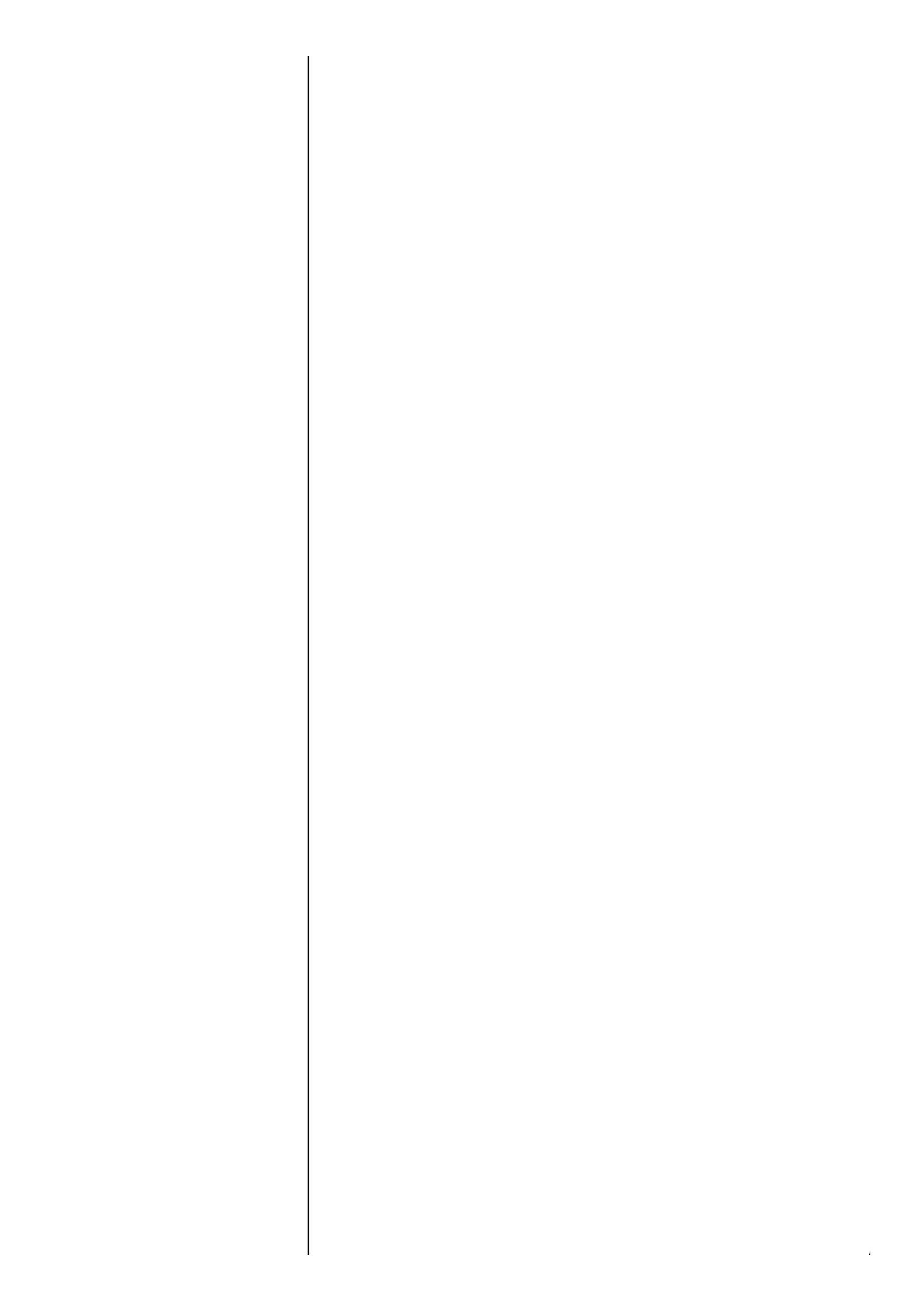
ationPointIndex: int, in mutantIndex: int): AbstractClassMutater

```
+ setEnvironment( in environment.environment)
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor,  in mutationPointIndex: int,  in mutantIndex: int): AbstractClassMutater

getDescription
checkInsn
mutateInsn
createCountingClassMutater
createClassMutater
checkMethod
checkAnnotationDefault
checkAnnotation
checkParameterAnnotation
checkAttribute
checkCode
checkInsn
checkIntInsn
checkVarInsn
checkTypeInsn
checkFieldInsn
checkMethodInsn
checkJumpInsn
checkLabel
checkLdclInsn
checkLinclInsn
checkTableSwitchInsn
checkLookupSwitchInsn
checkMultiANewArrayInsn
checkTryCatchBlock
checkLocalVariable
checkEnd
mutateAnnotationDefault
mutateAnnotation
mutateParameterAnnotation
mutateAttribute
mutateCode
mutateInsn
mutateIntInsn
mutateVarInsn
mutateTypeInsn
mutateFieldInsn
mutateMethodInsn
mutateJumpInsn
mutateLabel
mutateLdclInsn
mutateLinclInsn
mutateTableSwitchInsn
mutateLookupSwitchInsn
mutateMultiANewArrayInsn
mutateTryCatchBlock
mutateLocalVariable
mutateEnd
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
```

```
+ setEnvironment( in environment.environment)
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantl
getDescription
checkInsn
mutateInsn
createCountingClassMutater
createClassMutater
checkMethod
checkAnnotationDefault
checkAnnotation
checkParameterAnnotation
checkAttribute
checkCode
checkInsn
checkIntInsn
checkVarInsn
checkTypeInsn
checkFieldInsn
checkMethodInsn
checkJumpInsn
checkLabel
checkLdInsn
checkLineInsn
checkTableSwitchInsn
checkLookupSwitchInsn
checkMultiANewArrayInsn
checkTryCatchBlock
checkLocalVariable
checkEnd
mutateAnnotationDefault
mutateAnnotation
mutateParameterAnnotation
mutateAttribute
mutateCode
mutateInsn
mutateIntInsn
mutateVarInsn
mutateTypeInsn
mutateFieldInsn
mutateMethodInsn
mutateJumpInsn
mutateLabel
mutateLdInsn
mutateLineInsn
mutateTableSwitchInsn
mutateLookupSwitchInsn
mutateMultiANewArrayInsn
mutateTryCatchBlock
mutateLocalVariable
mutateEnd
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
aetEnvironment
```

ndex: int): AbstractClassMutater



+ CanRetry(in null <undefined>)

- UpFrontHomMutationWork
- generateAndEvaluateFoms
- createExecutor
- HomMutationWork
- run
- searchBestHom
- createHomFactory
- createDataCollector
- getObjectives
- getExecutor
- getFilter
- getMaxMutationOrder
- MutationWork
- run
- collectSummaryData
- computeInitialTestsDuration
- init
- initReset
- mutate
- getBytecode
- generateFoms
- mutate
- getEvaluator
- getStatistic
- setStatistic
- getKind
- setKind
- getTargetClass
- getOperators
- setOperators
- getCache
- setCache
- getResultFormatter
- setResultFormatter
- getSerialVersionUID
- getClasspath
- getEnvFactory
- getTesterFactory
- getOperatorsFactory
- getMaxInfiniteLoopGuardTimeout
- getTester
- setTester
- setEvaluator
- getLOGGER
- getWorkspace
- AbstractWork
- getClientId
- canRetry
- getRetries
- getSerialVersionUID

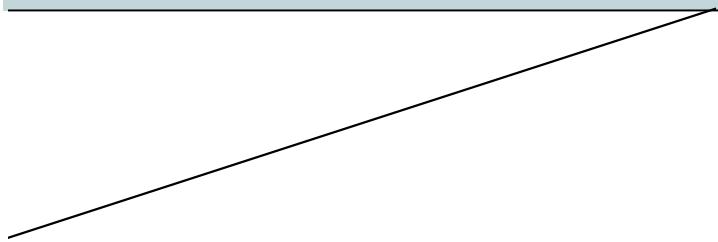
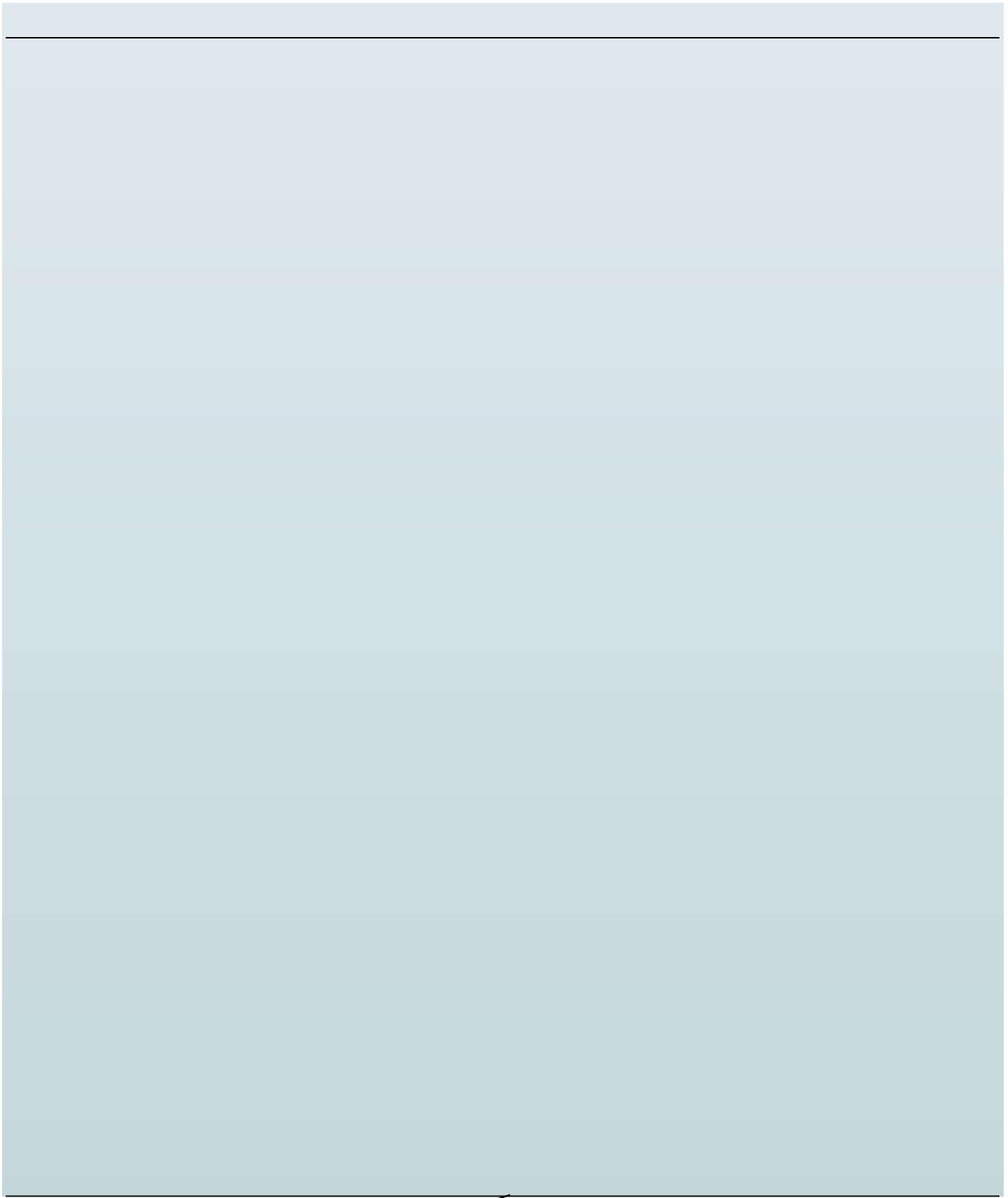


|



+ CanRetry(in null, <undefined>)

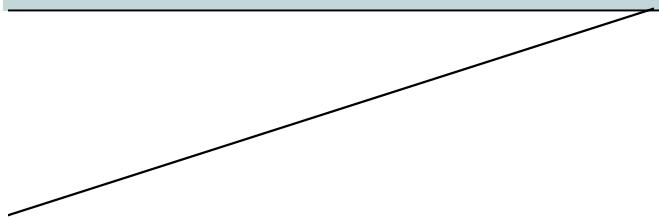
OnTheFlyHomMutationWork
createFomFactory
createExecutor
HomMutationWork
run
searchBestHom
createHomFactory
createDataCollector
getObjectives
getExecutor
getFilter
getMaxMutationOrder
MutationWork
run
collectSummaryData
computeInitialTestsDuration
init
initReset
mutate
getBytecode
generateFoms
mutate
getEvaluator
getStatistic
setStatistic
getKind
setKind
getTargetClass
getOperators
setOperators
getCache
setCache
getResultFormatter
setResultFormatter
getSerialVersionUID
getClasspath
getEnvFactory
getTesterFactory
getOperatorsFactory
getMaxInfiniteLoopGuardTimeout
getTester
setTester
setEvaluator
getLOGGER
getWorkspace
AbstractWork
getClientId
canRetry
getRetries
getSerialVersionUID





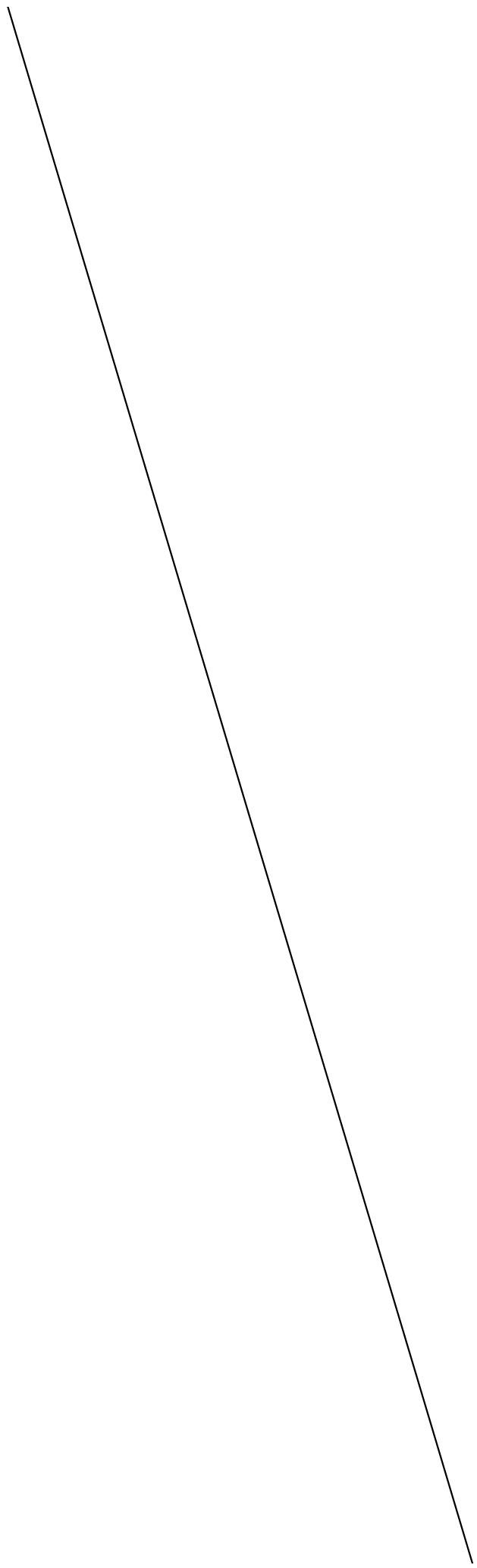
+ Category(in null. <UnDefined>)

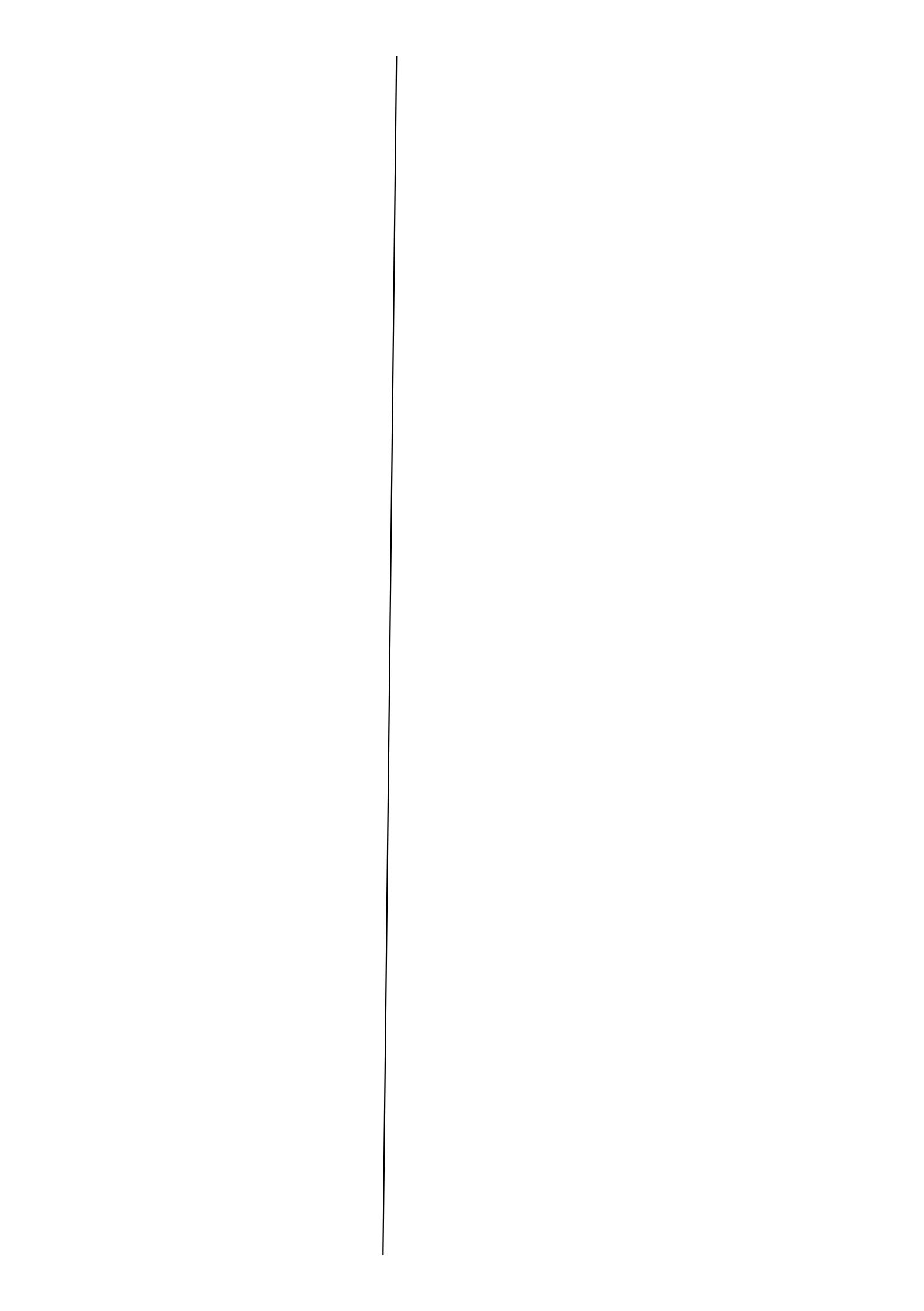
- NotEquivalentHomMutationWork
- createFomFactory
- createExecutor
- HomMutationWork
- run
- searchBestHom
- createHomFactory
- createDataCollector
- getObjectives
- getExecutor
- getFilter
- getMaxMutationOrder
- MutationWork
- run
- collectSummaryData
- computeInitialTestsDuration
- init
- initReset
- mutate
- getBytecode
- generateFoms
- mutate
- getEvaluator
- getStatistic
- setStatistic
- getKind
- setKind
- getTargetClass
- getOperators
- setOperators
- getCache
- setCache
- getResultFormatter
- setResultFormatter
- getSerialVersionUID
- getClasspath
- getEnvFactory
- getTesterFactory
- getOperatorsFactory
- getMaxInfiniteLoopGuardTimeout
- getTester
- setTester
- setEvaluator
- getLOGGER
- getWorkspace
- AbstractWork
- getClientId
- canRetry
- getRetries
- getSerialVersionUID

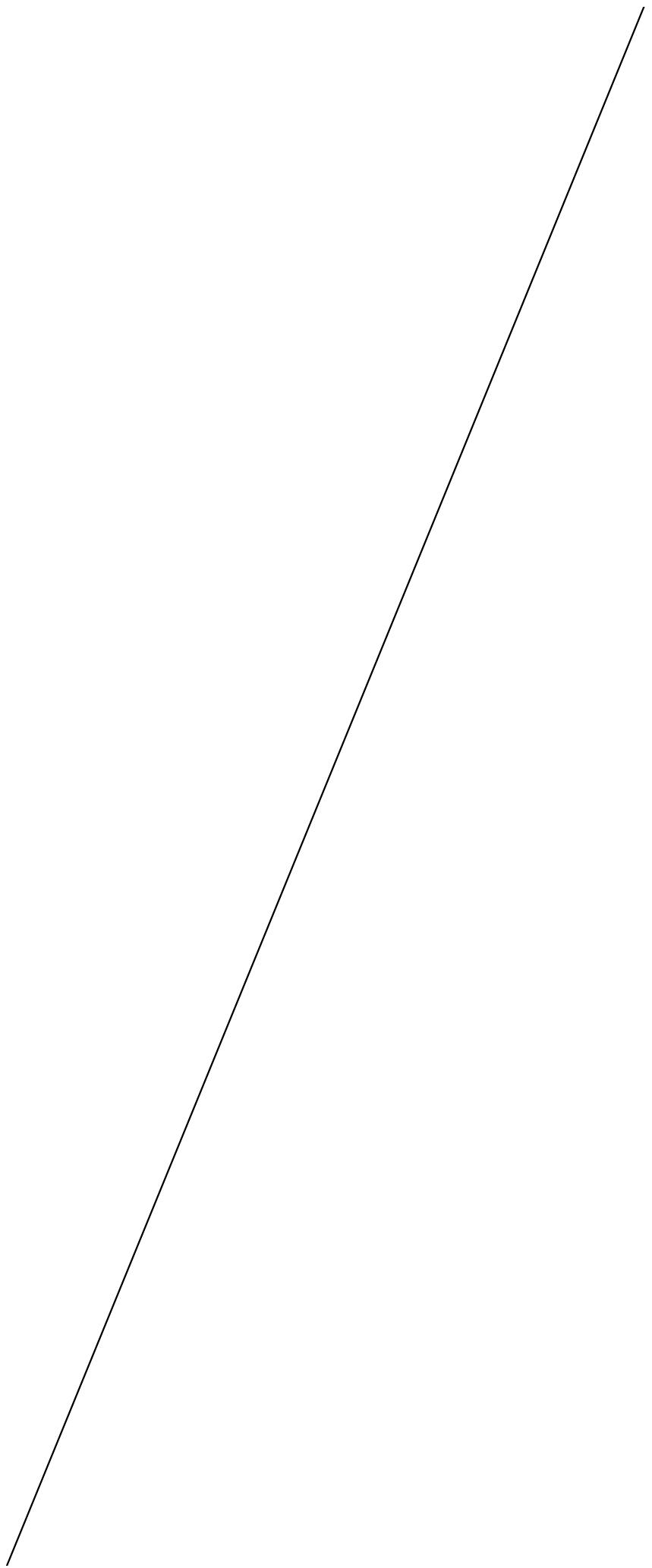


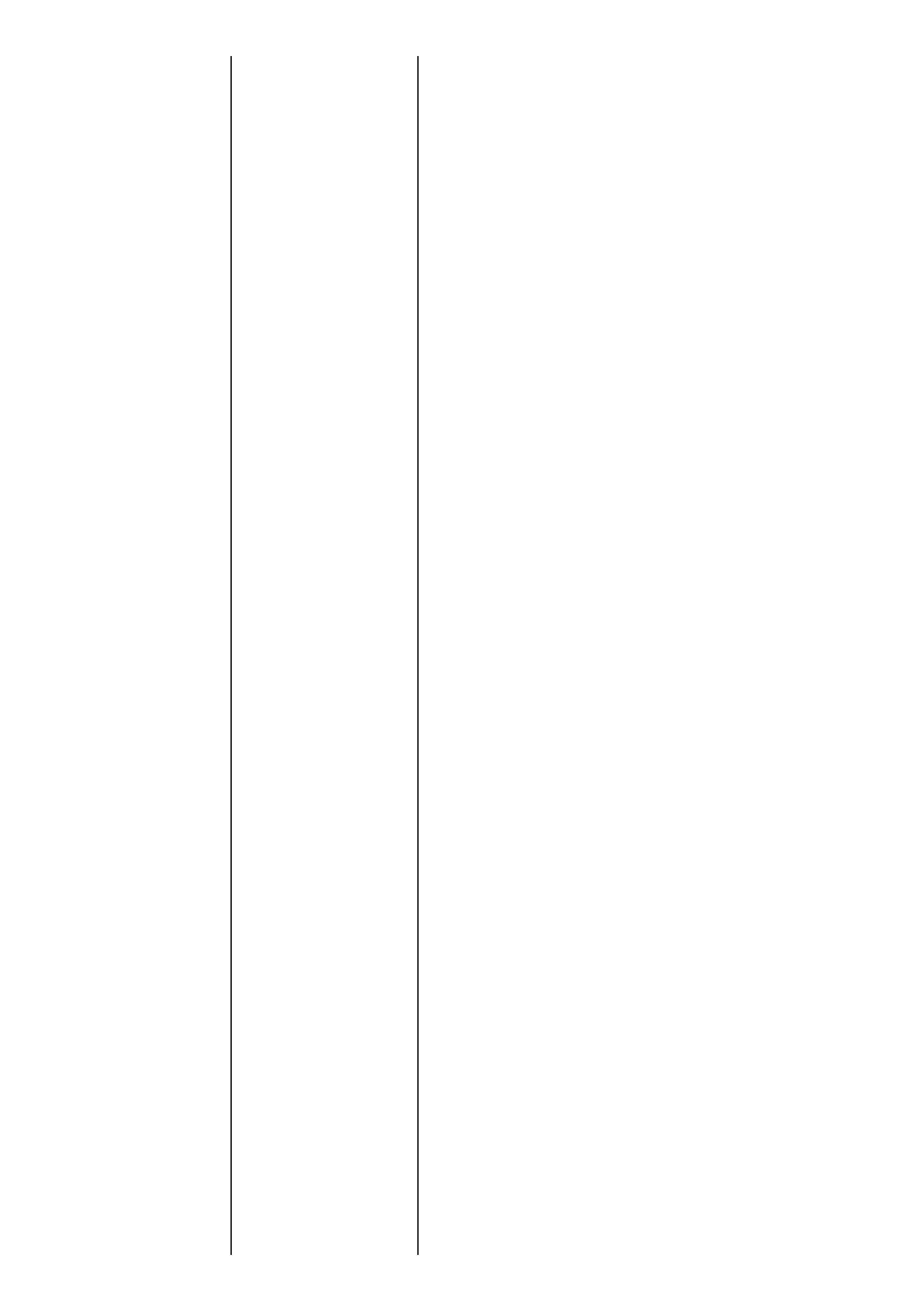


ClassMutationResultPart implements IClassMutationResultPart









```
visitCandidate
visitField
visitInnerClass
visitMethod
visitOuterClass
visitSource
visitEnd
AbstractClassMutater
getMutationPoints
getMutantLineNumber
getMutantDescription
getMethodDescriptor
getMethodName
setMutantLineNumber
setMutantDescription
setMutatedMethodName
setMutatedMethodDescriptor
isCountingMutants
shouldMutate
getMutantIndex
nextMutationPoint
nextMutationPoint
```

```
visitObjectClass
visitField
visitMethod
visitEnd
AbstractClassMutater
getMutationPoints
getMutantLineNumber
getMutantDescription
getMethodDescriptor
getMethodName
setMutantLineNumber
setMutantDescription
setMutatedMethodName
setMutatedMethodDescriptor
isCountingMutants
shouldMutate
getMutantIndex
nextMutationPoint
nextMutationPoint
```

MutationOperatorsFactory implements IMutationOperatorsFactory

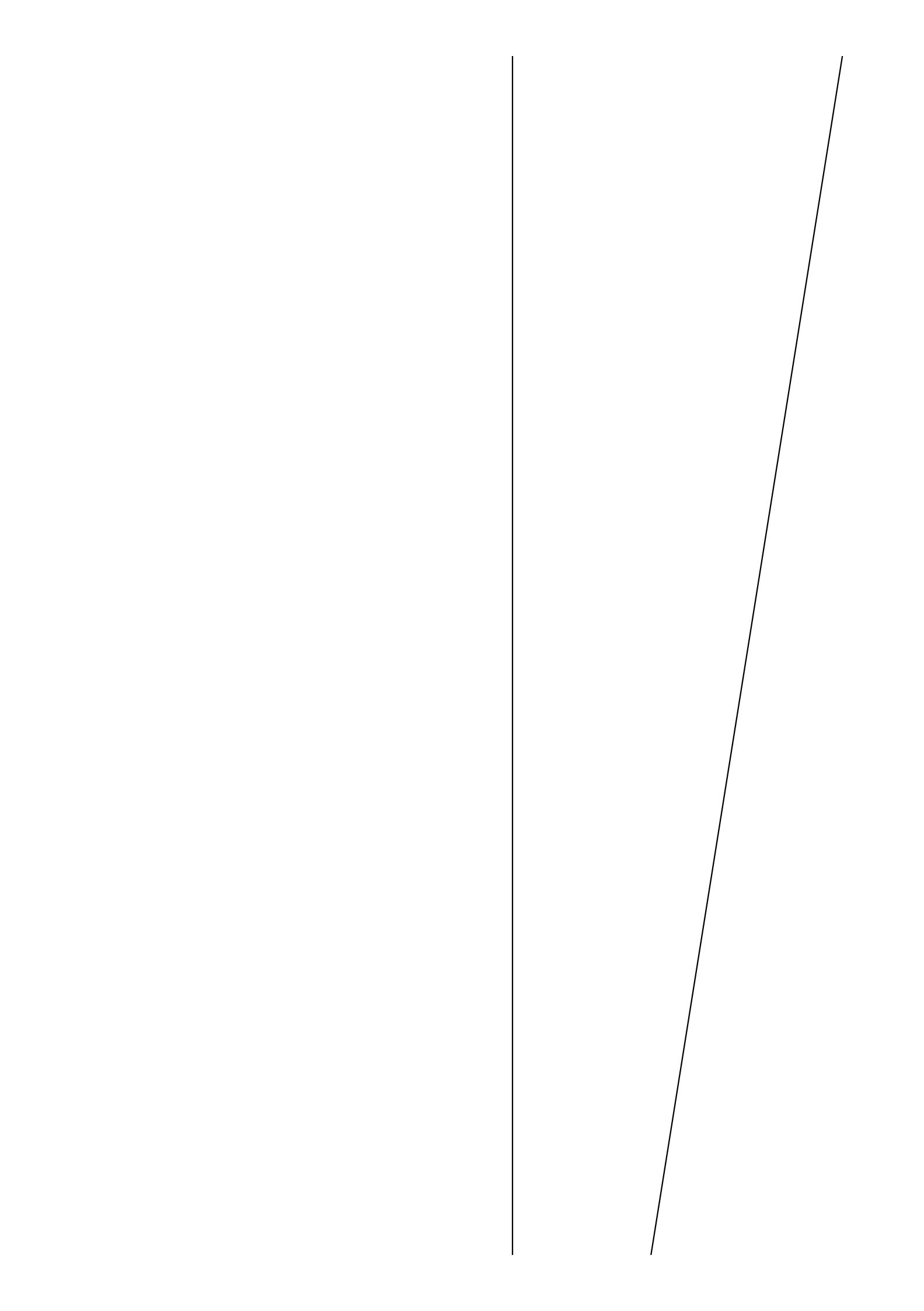
```
+ addMethod( in sourceClass: String, in testClass: String, in null: <Undefined>)
+ addMethod( in sourceClass: String, in testClass: String, in methodCoverage: <Undefined>)

addClass
getCoveredClasses
getCoveringTestClasses
isCovered
getCoveringTestMethods
addMethod
countCoveringTestClasses
getSingleTestCoverage
getTestCoverage
getMethodCoverage
getCoverageMap
```

MapCoverage implements ICoverage



JUnitTestResult implements ITestResult



TestsRun implements IInit

ialTestsRun

N

`IMutantEvaluator` implements `IMutantEvaluator`

InitialTestRunner implements IInitialTestsRunner

MutantCache implements IMutantCache

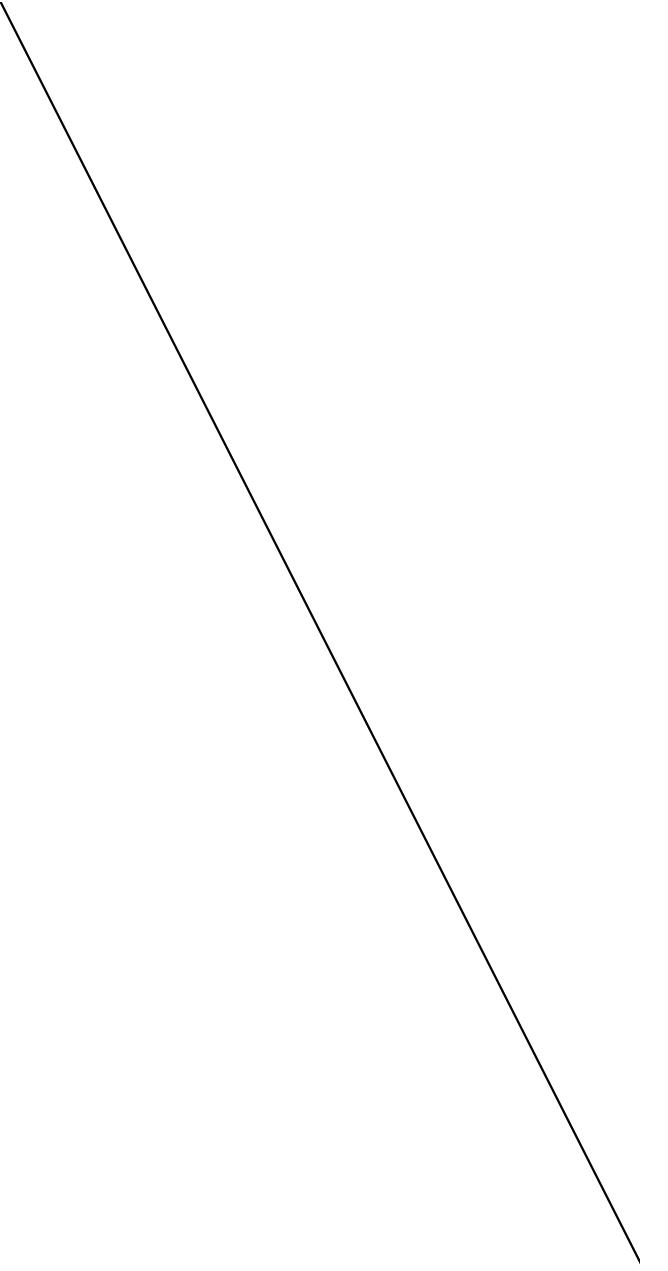
CachingFormFactory implements FormFactory

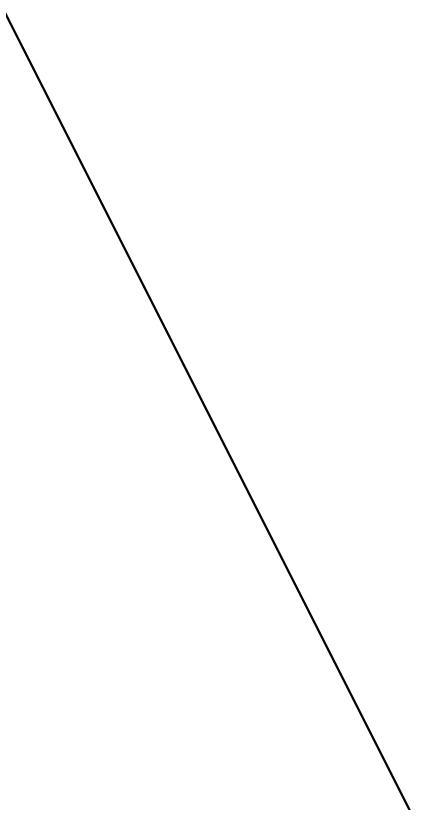
DummyFilter implements IMutantFilter

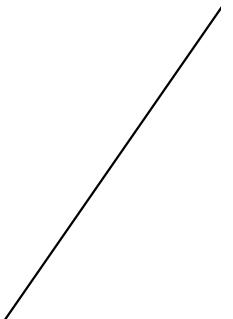
TrivialMutantFilter implements IMutantFilter

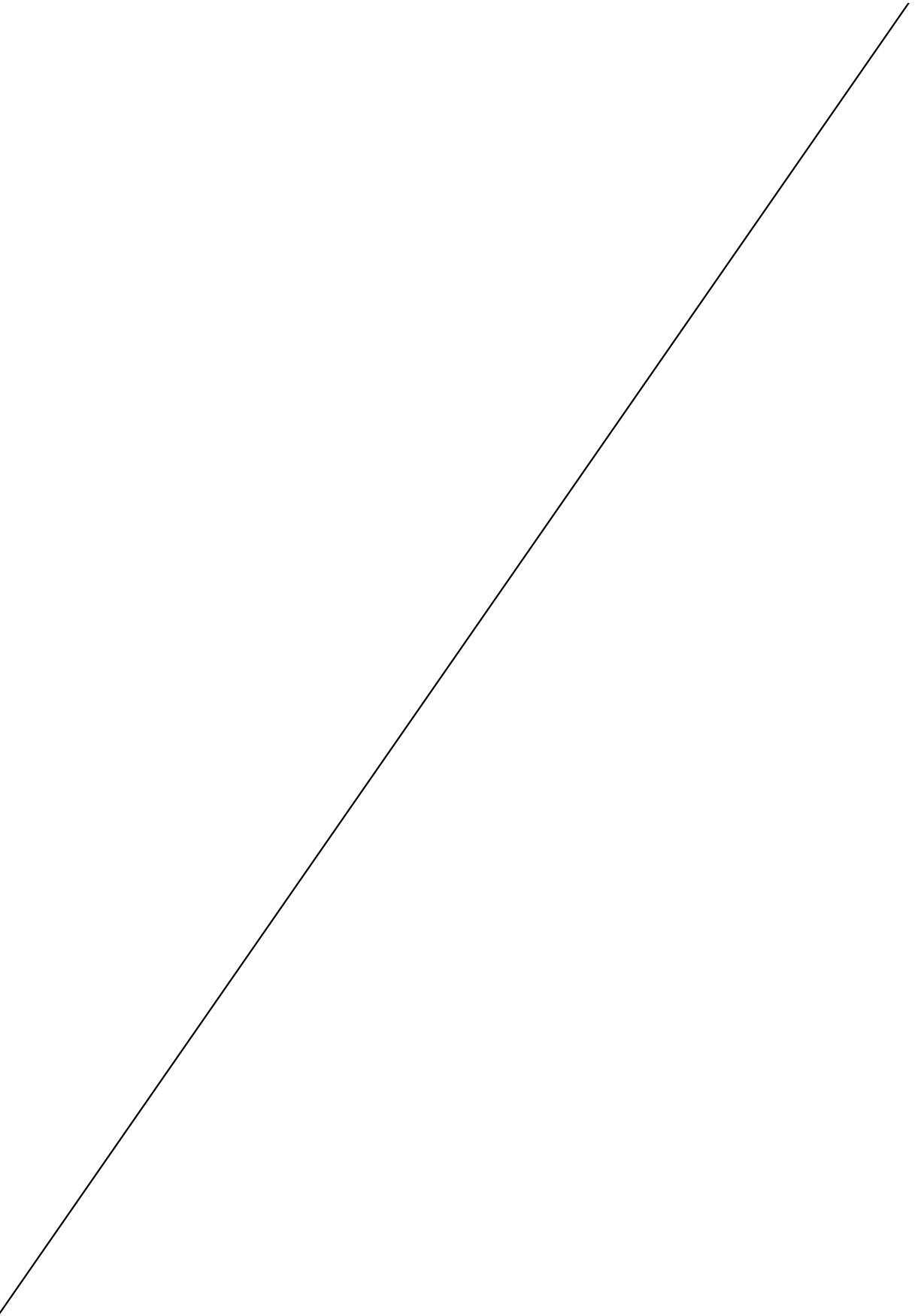
ObjectivesFactory implement

:s IObjectivesFactory










```
visitInnerClass  
visitField  
visitMethod  
visitEnd  
AbstractClassMutater  
getMutationPoints  
getMutantLineNumber  
getMutantDescription  
getMethodDescriptor  
getMethodName  
setMutantLineNumber  
setMutantDescription  
setMutatedMethodName  
setMutatedMethodDescriptor  
isCountingMutants  
shouldMutate  
getMutantIndex  
nextMutationPoint  
nextMutationPoint
```

CollectionClassMutator implements MutationObserver

HomDataCollector implements IHomDataCollectc

SomGeneratorFactory implements ISomGeneratorFactory

Gu.

)r

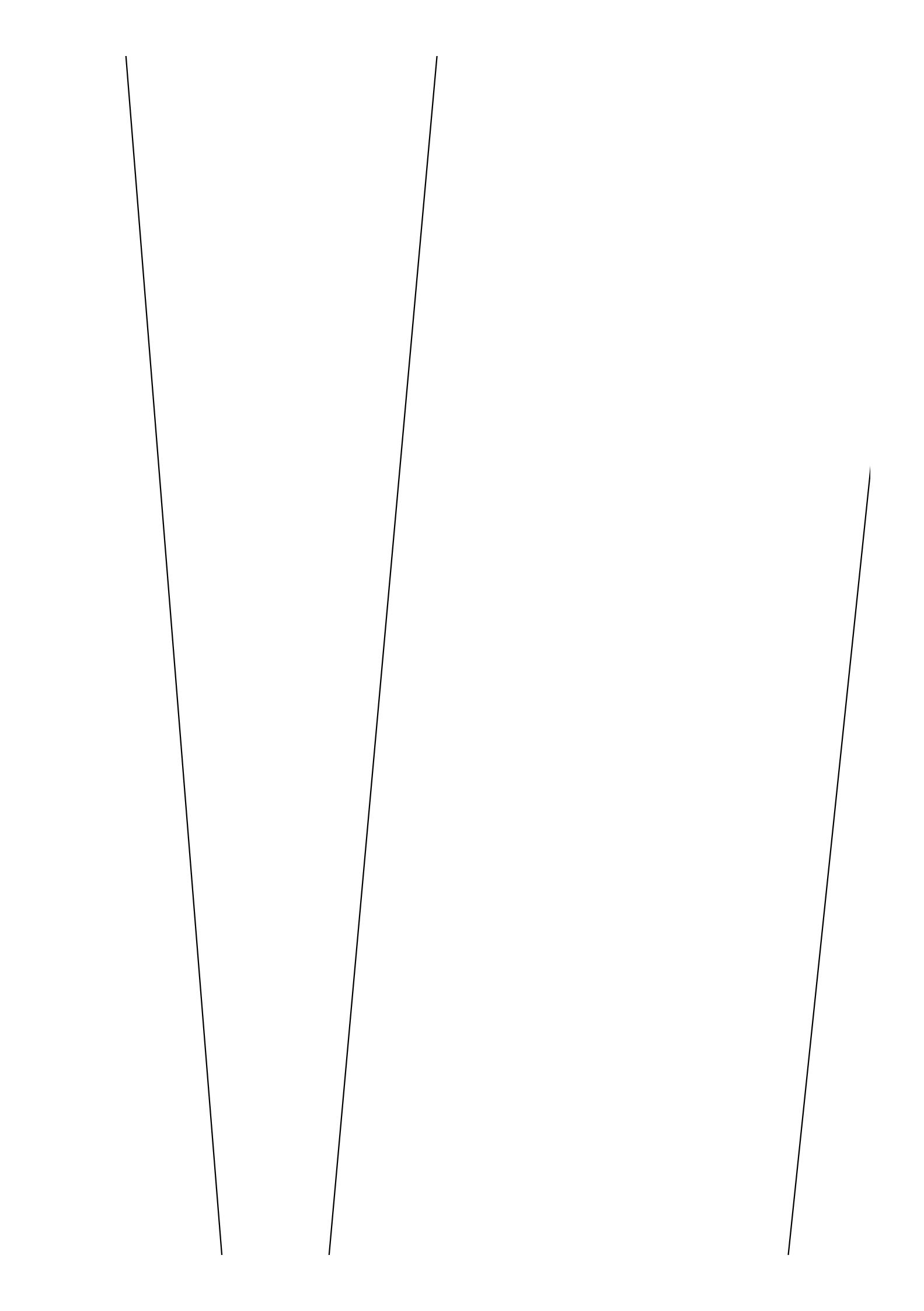
ardInstrumenter implements Instrumenter

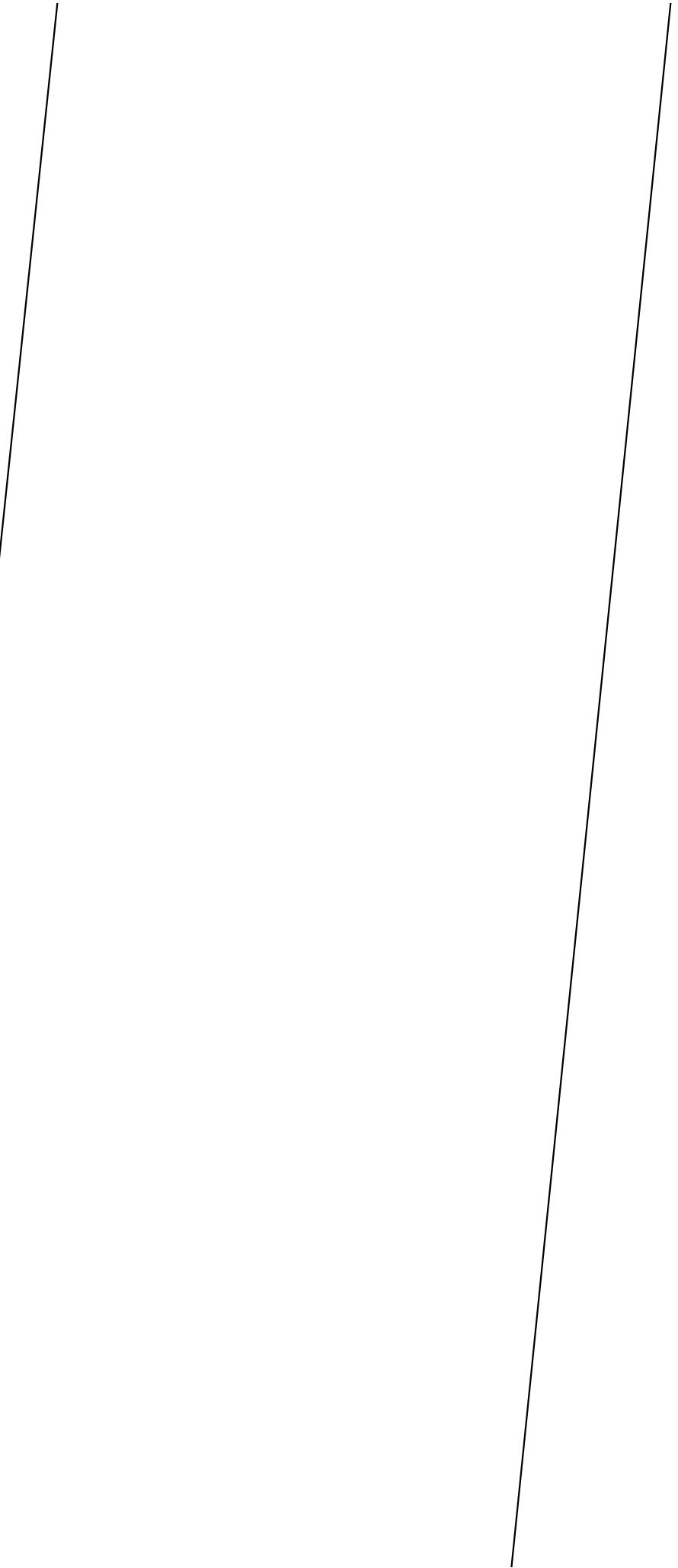
N

`IMutantBytecode` implements `IMutantBytecode`

Mutate

ationPoint implements IMutationPoint





CSTMethodVisitorProvider implements MethodVisitorProvider

CCEMethodVisitorProvider implements MethodVisitorProvider

DULMethodVisitor ~~REVMETHODVisitor~~ ProvideVisitorProvide

r

LSFMethodVisitorProvider in

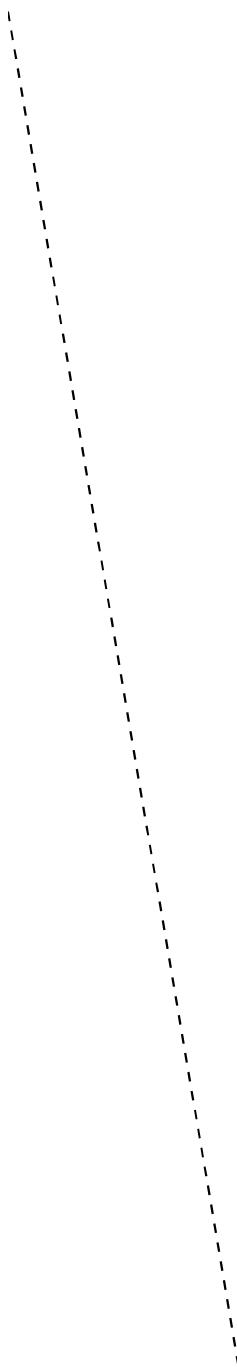
implements MethodVisitorProvider

ORVMethodVisitorProvider implements

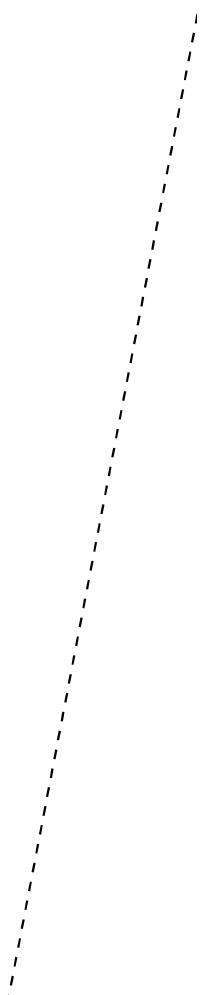
elements MethodVisitorProvider

CoverageClassLoaderFactory implements ICoverageGlas

sLoaderFactory



MutationClassLoaderFactory implement



ts IMutationClassLoaderFactory

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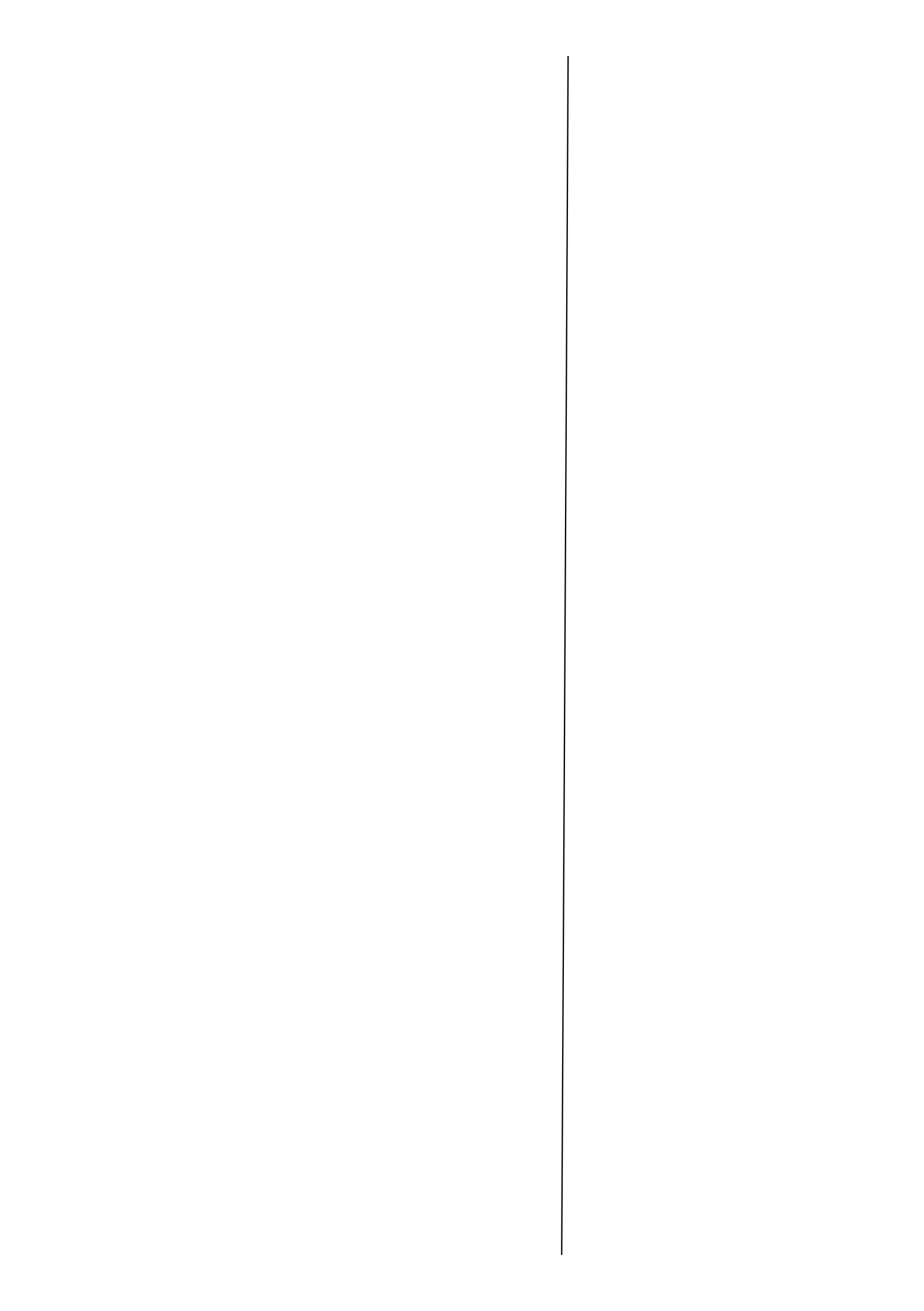
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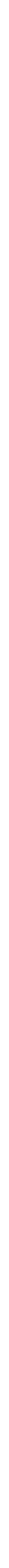


1

ResearchDataCollector implements IResearc

:hDataCollector

TesterFactory implements ITesterFactory

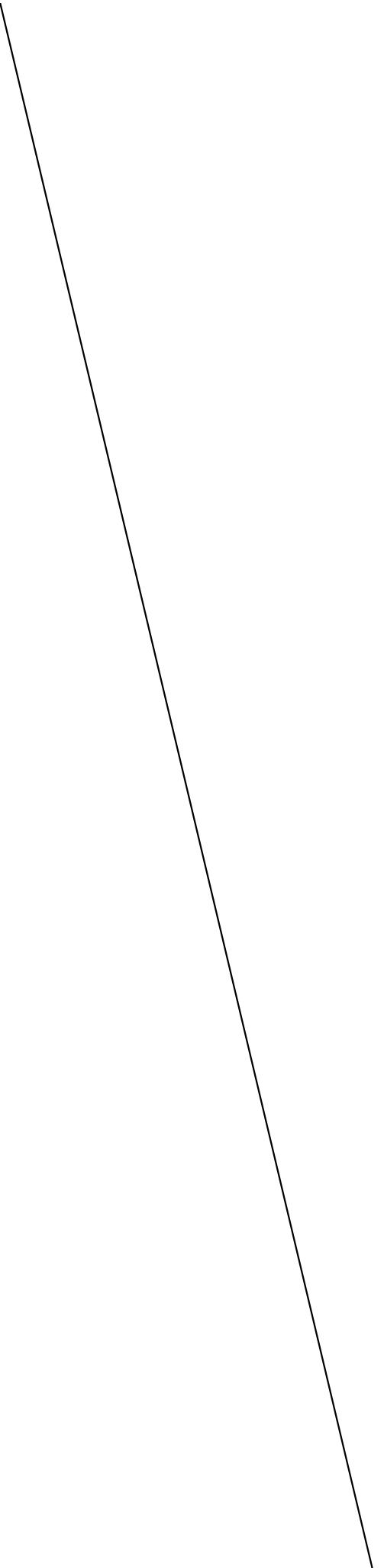


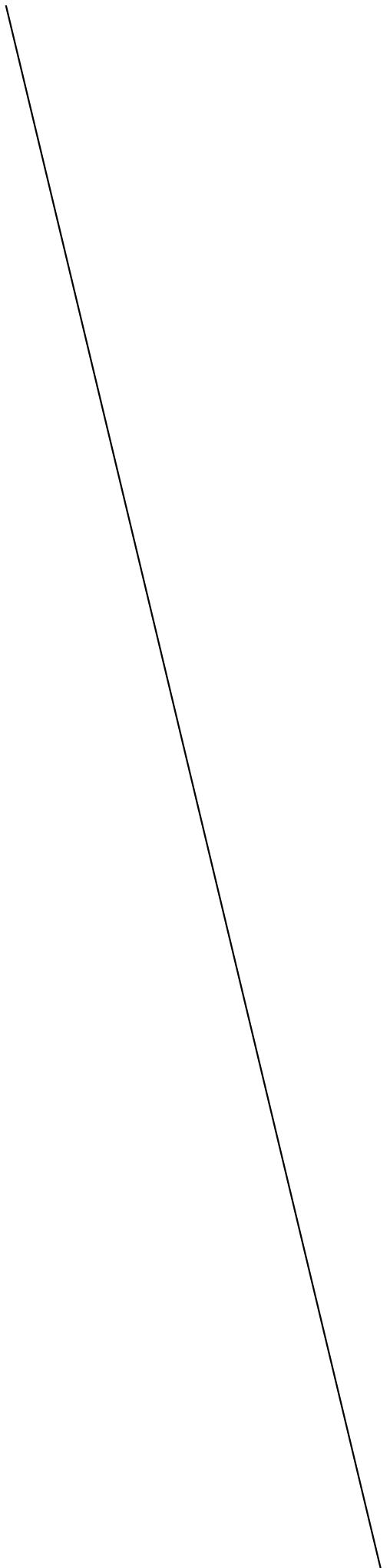
JUnitMutationTes

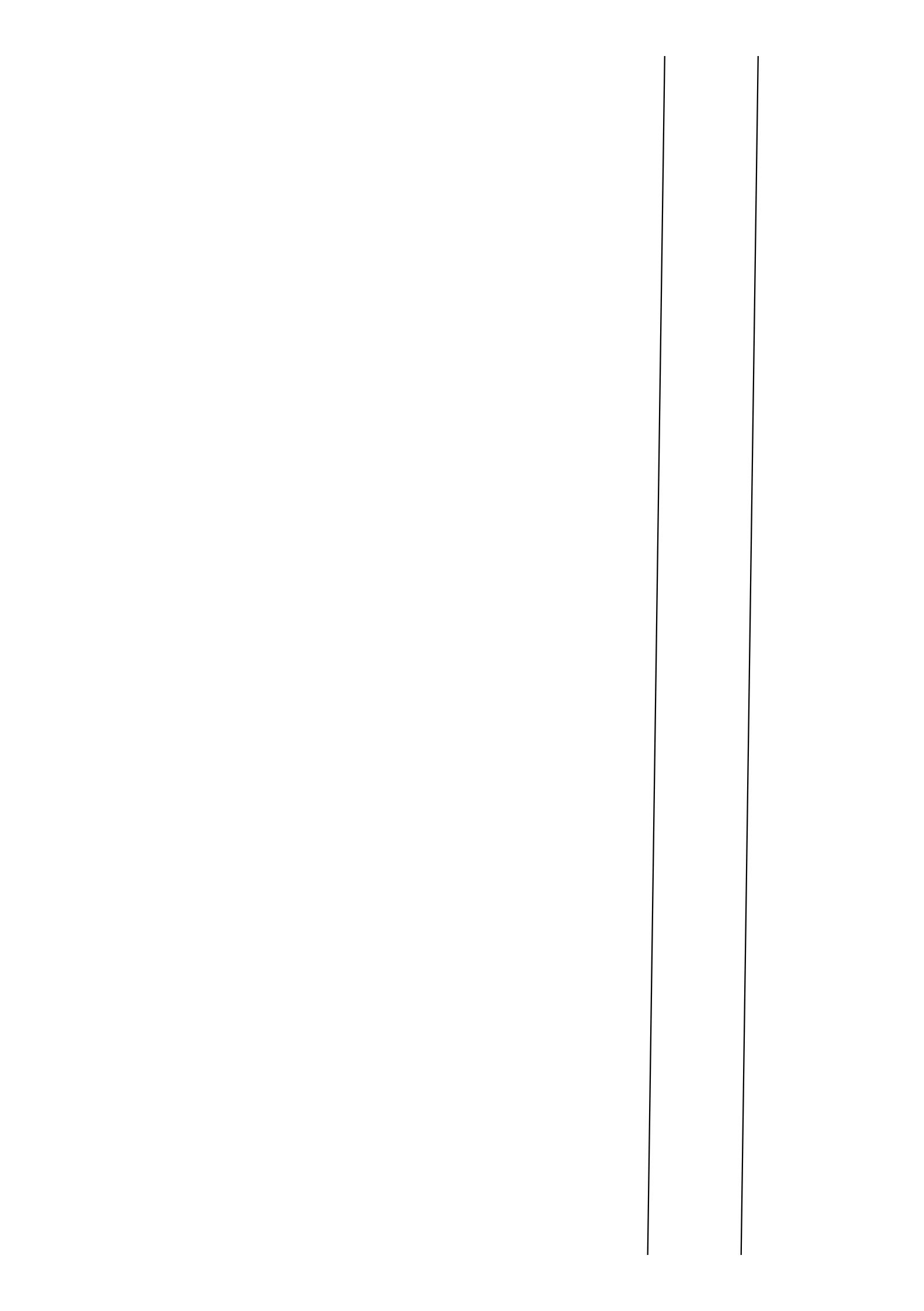
JUnitCoverageTester implements ITester

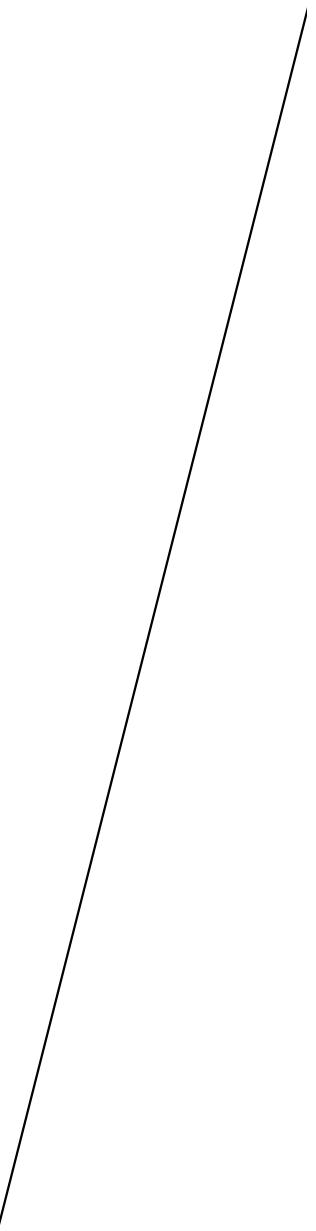
This diagram illustrates a UML class relationship. It features two vertical dashed lines representing boundaries. A solid line connects the top of the left boundary to the bottom of the right boundary, forming a bridge between them. The text "JUnitCoverageTester implements ITester" is positioned at the midpoint of this bridge line.

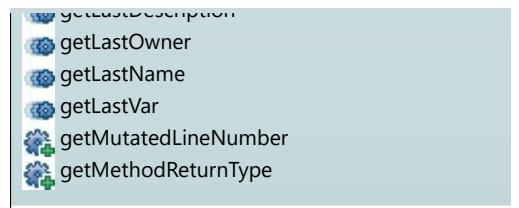
:ter implements ITester













TestThreadFactory implements ITestThreadFactory

BytecodeCache implements IBytecodeCache

Mutant implements IMutant

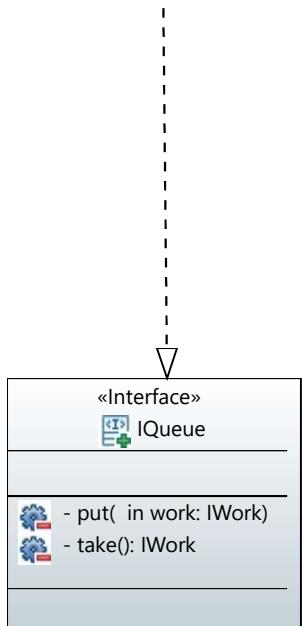
ClassMutationResu

It implements IClassMutationResult

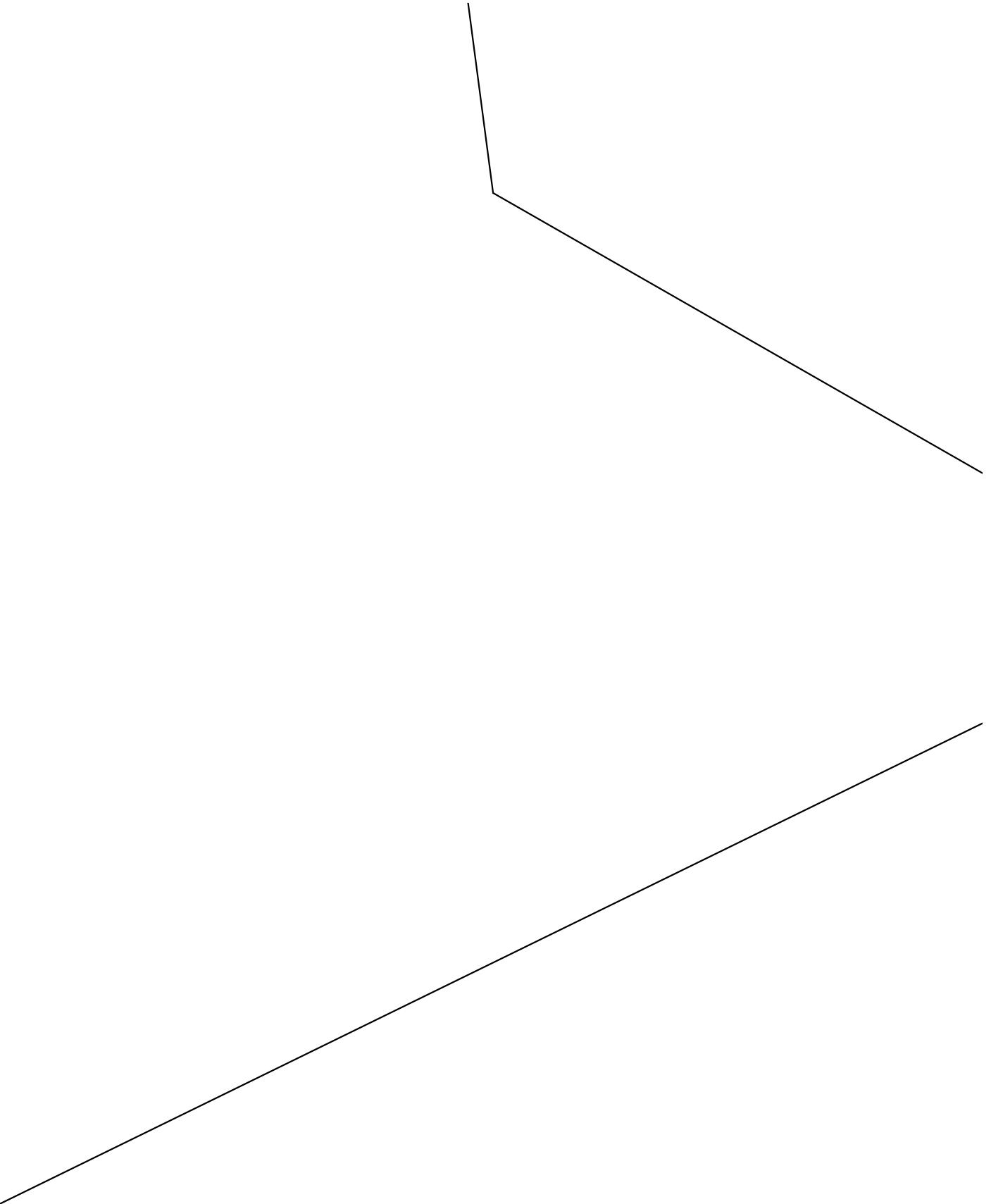
MutationWorkFactory implements IMutationWorkFactory

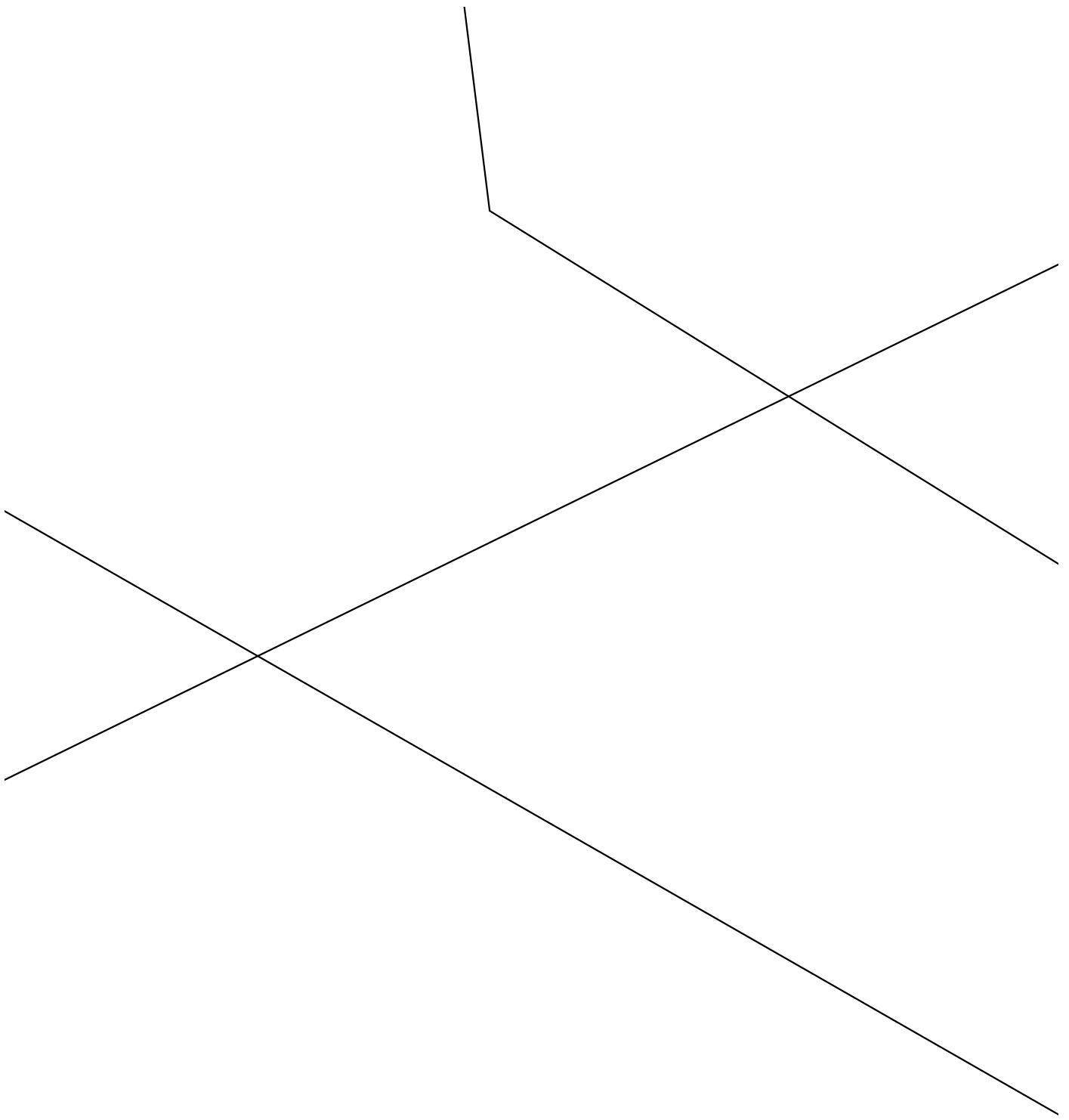
HomMutationWorkFactory implements IMutationWorkFactory

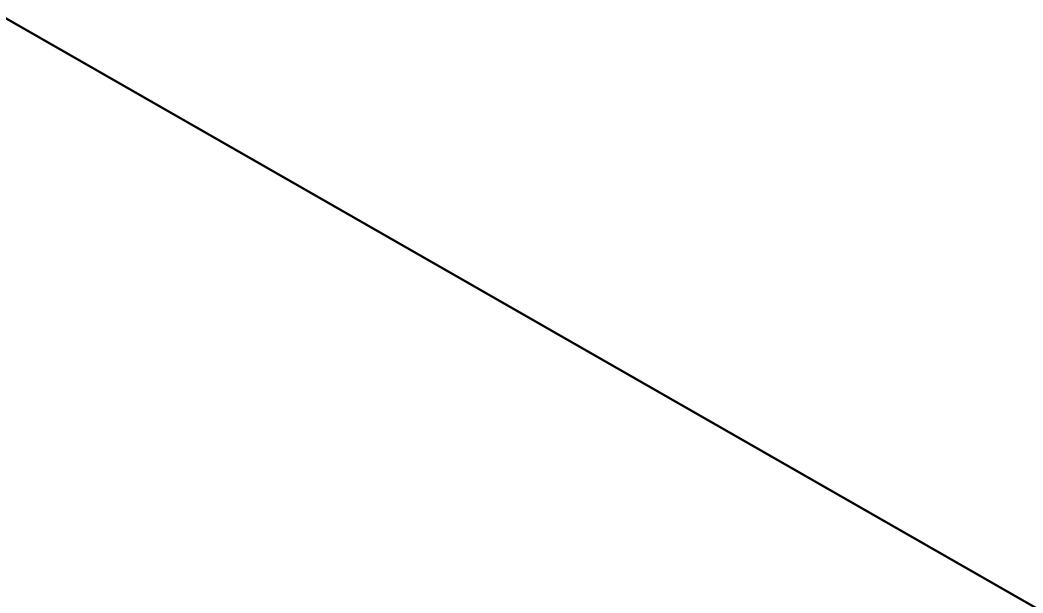
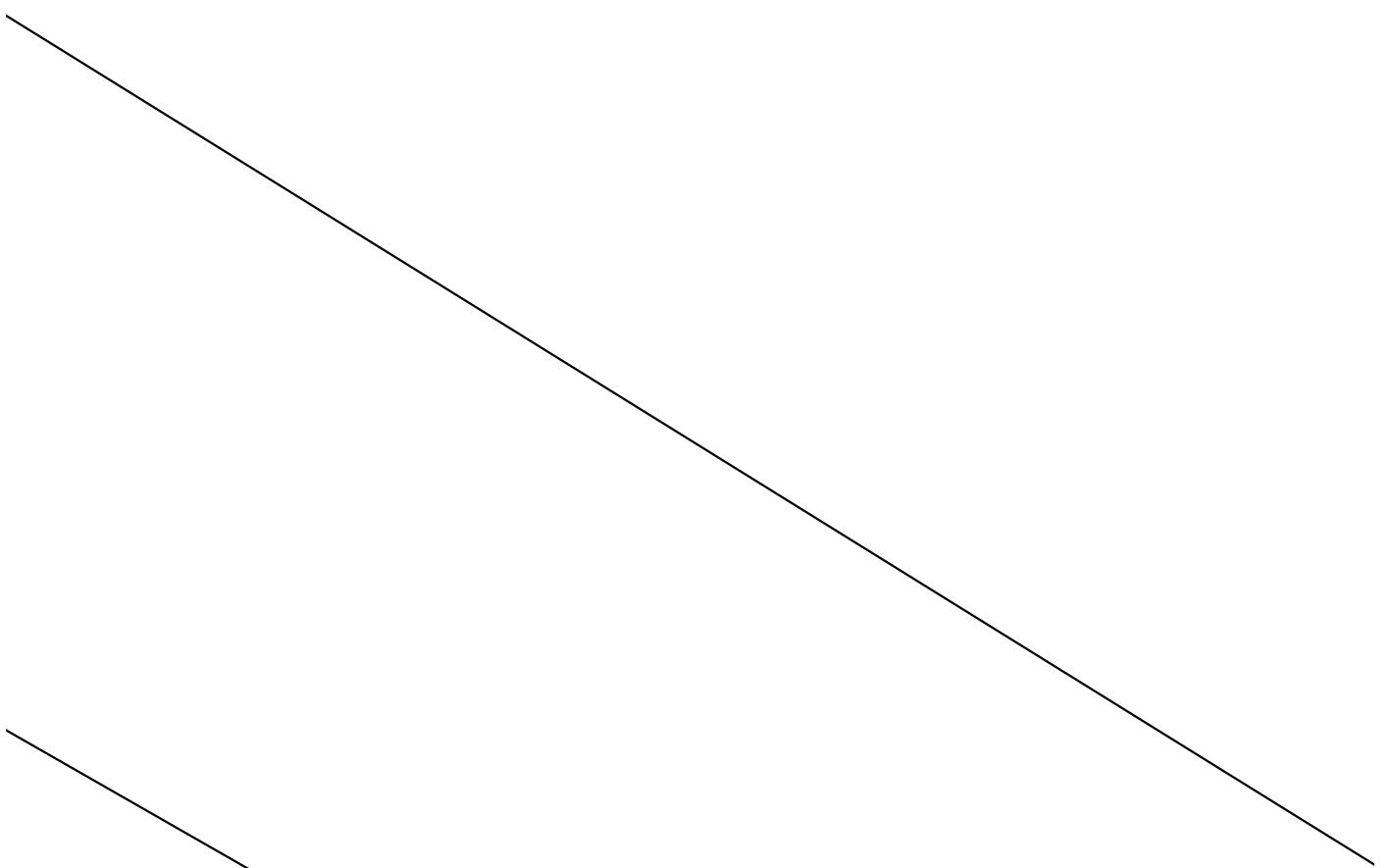
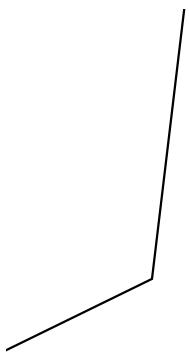
SomMutationWorkFactory implements IMutationWorkFactory

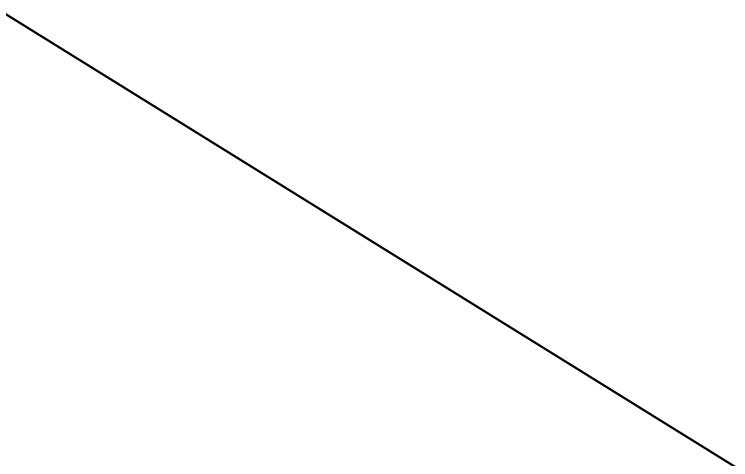


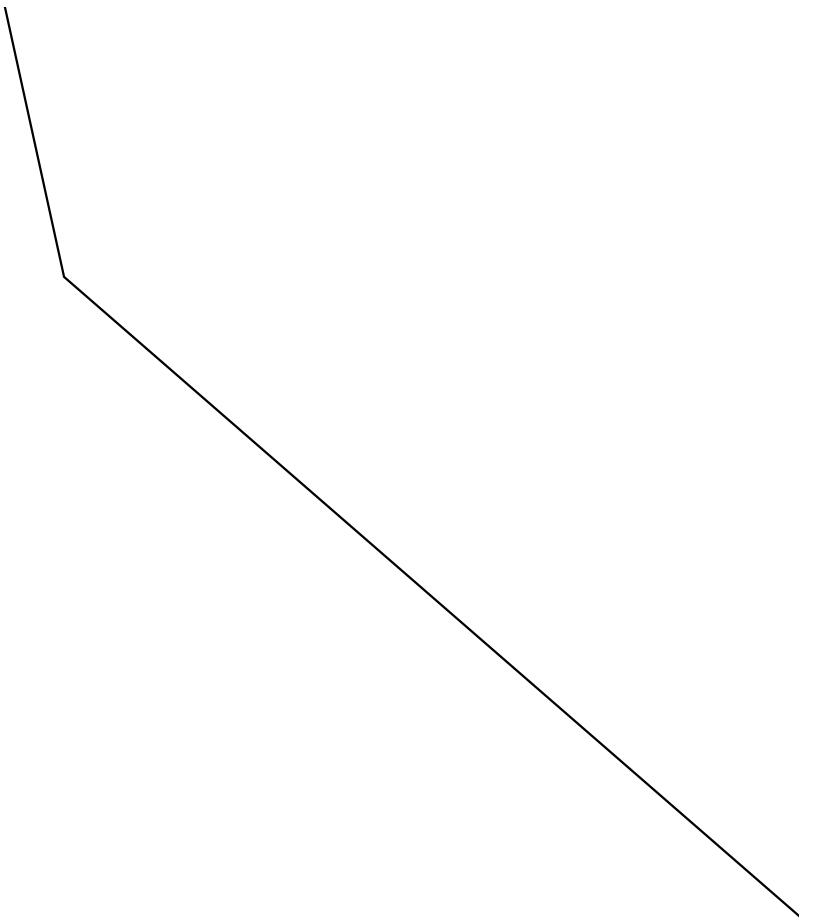


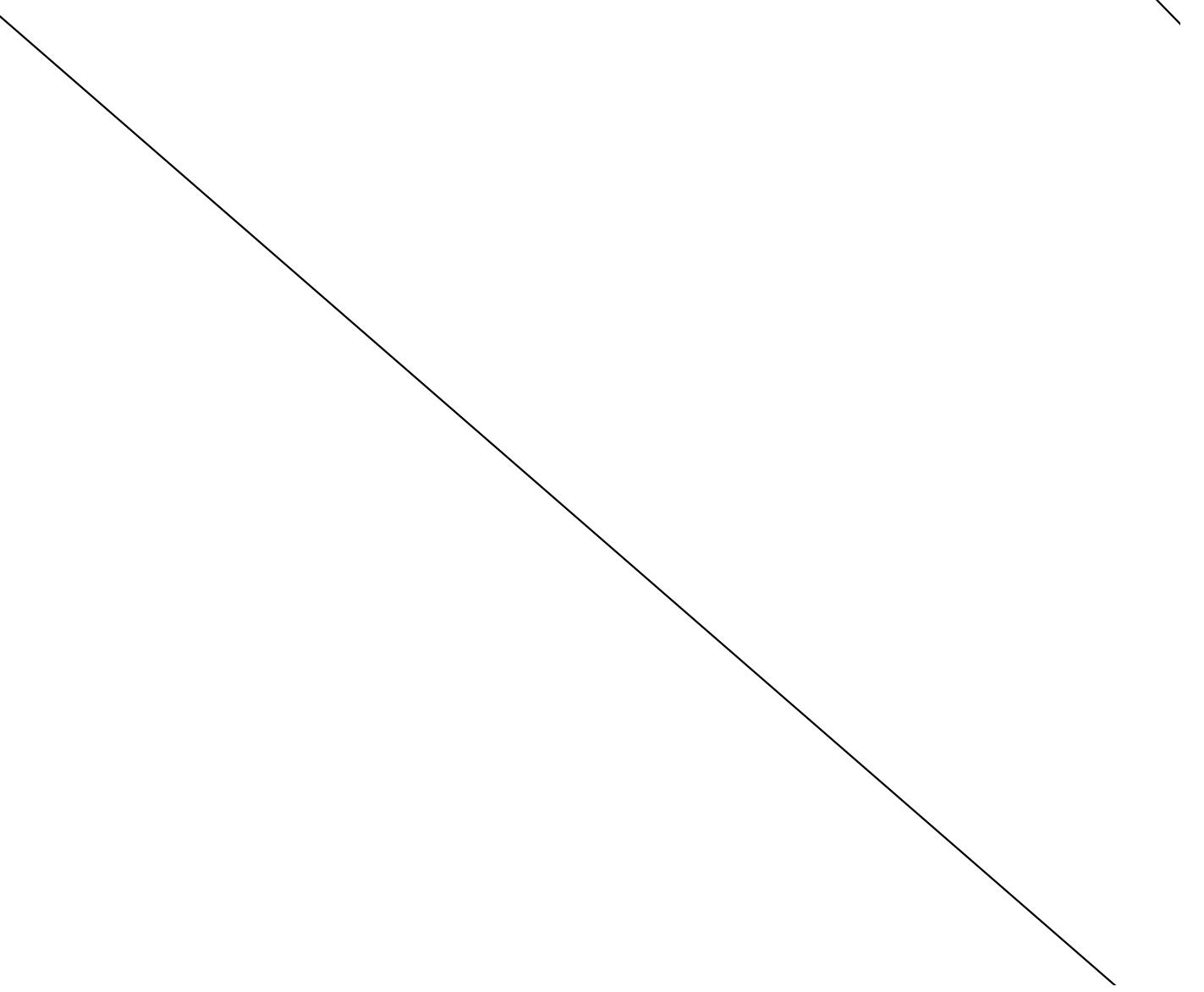


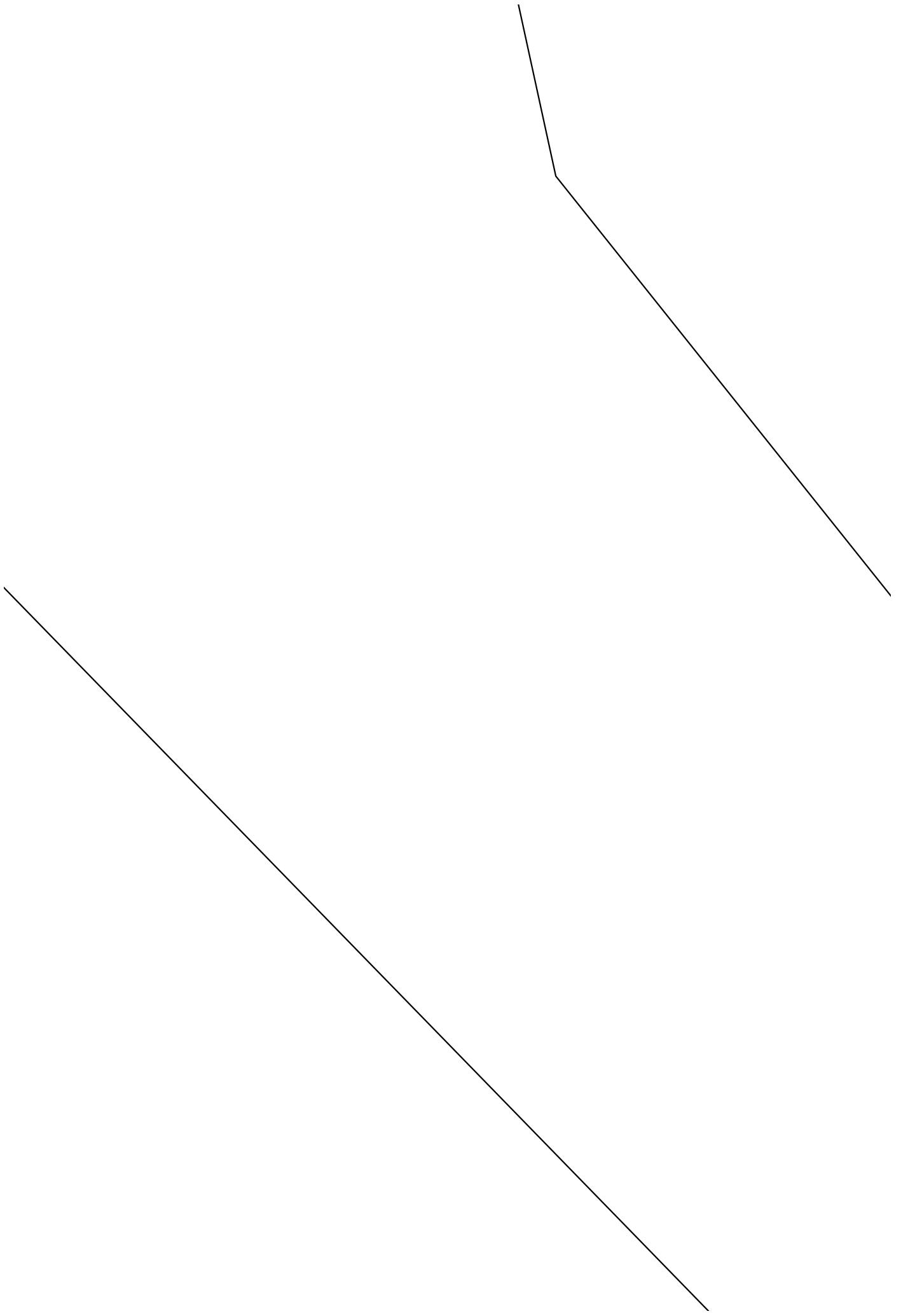


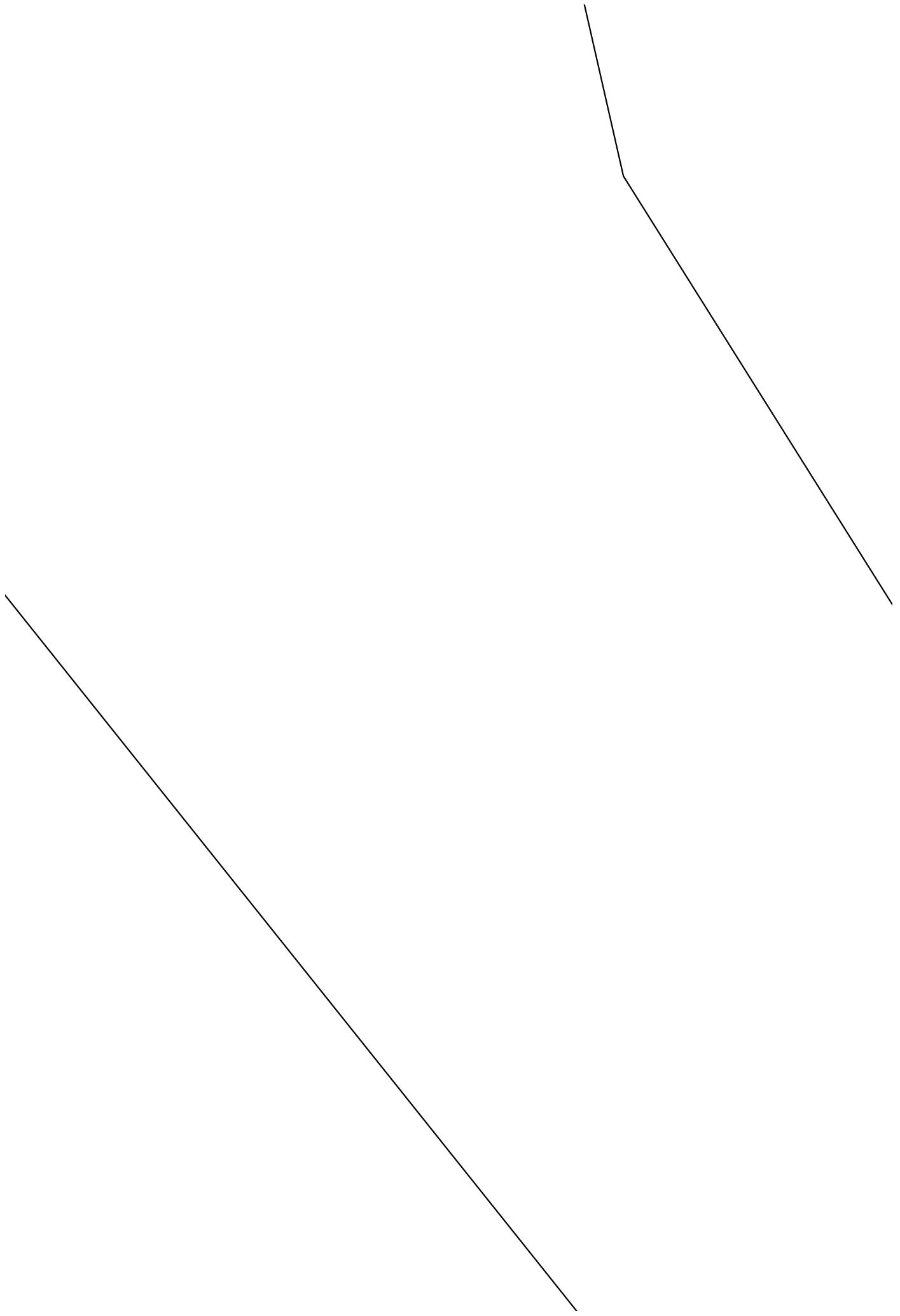


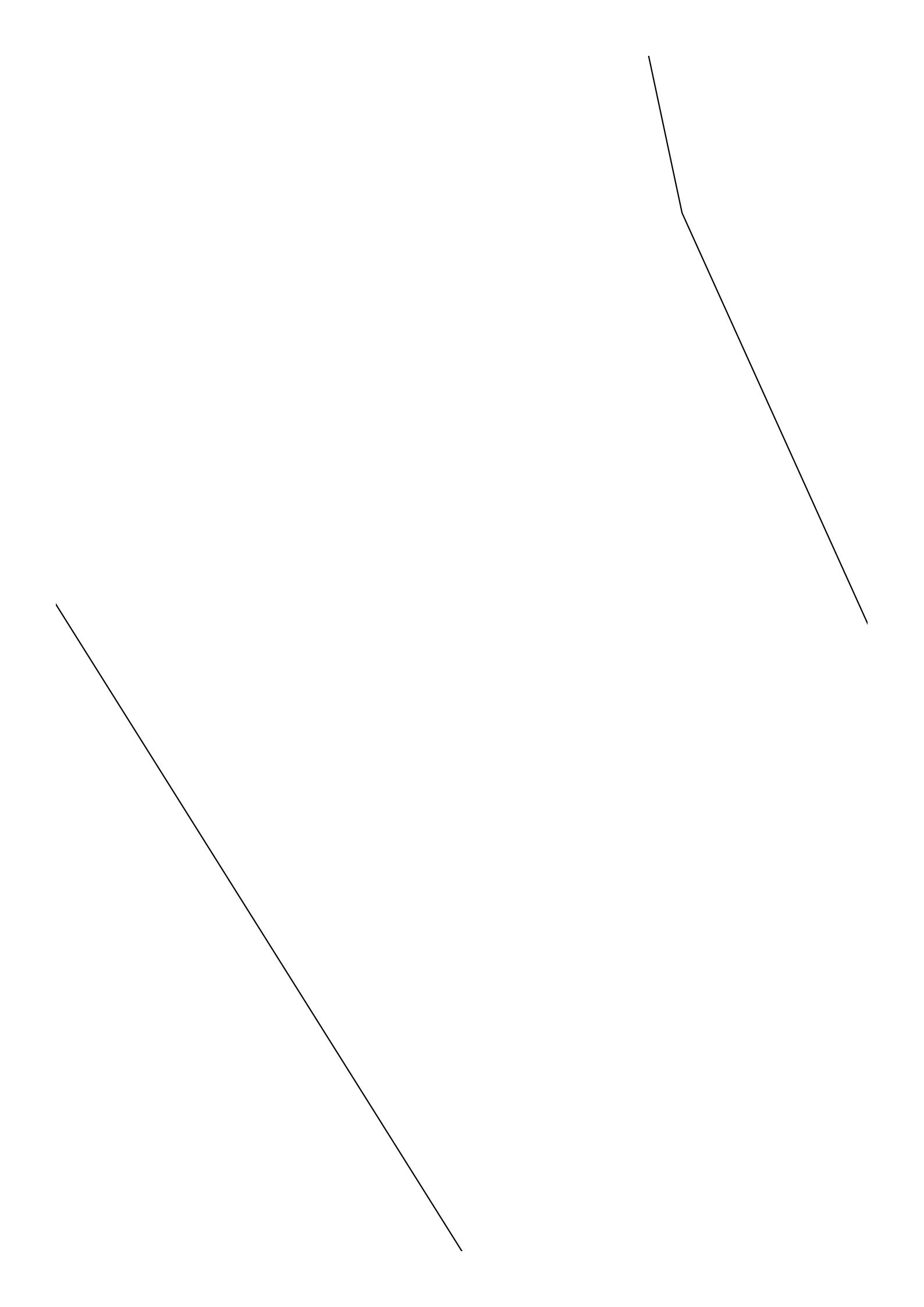


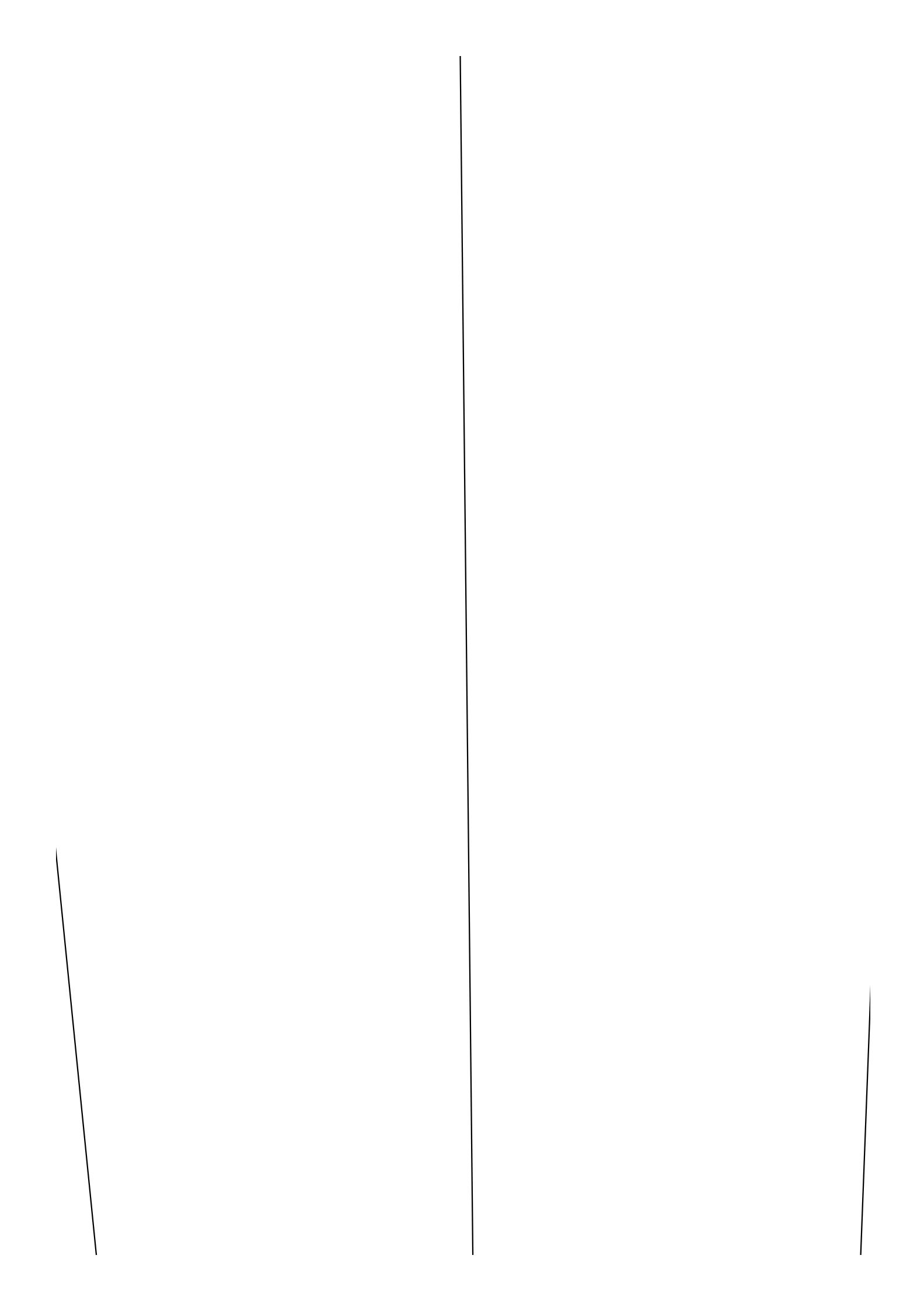


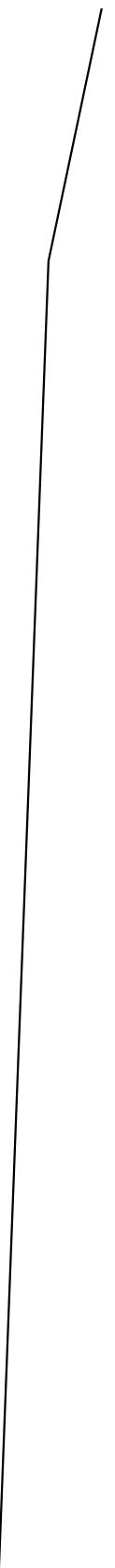


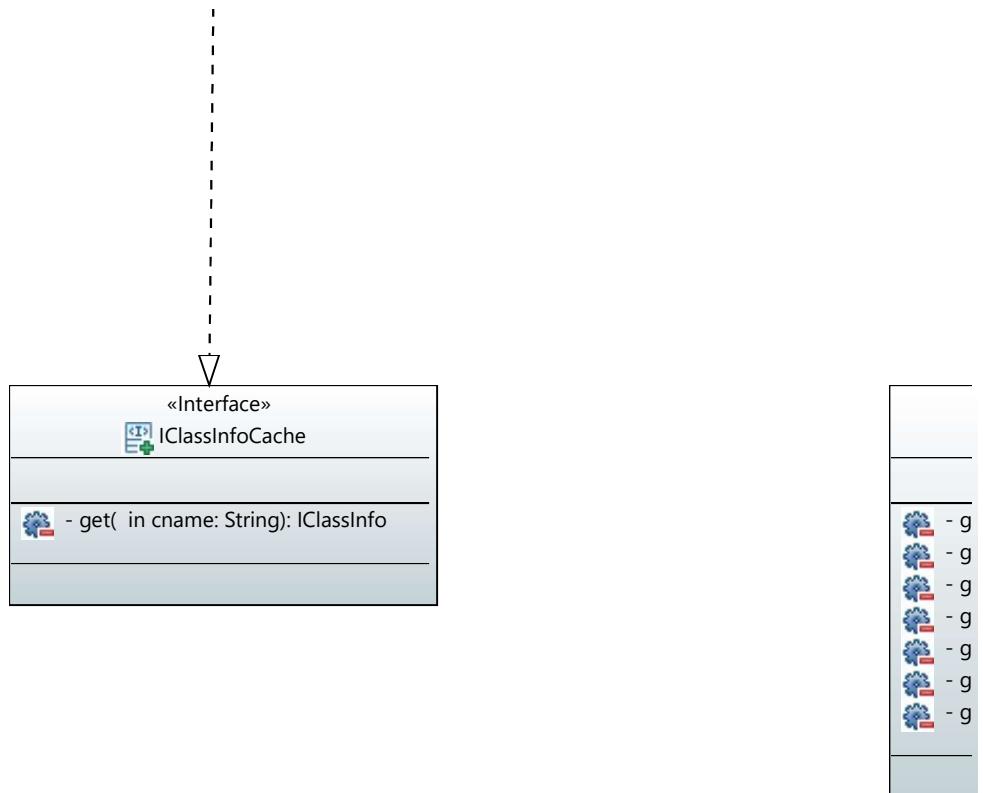


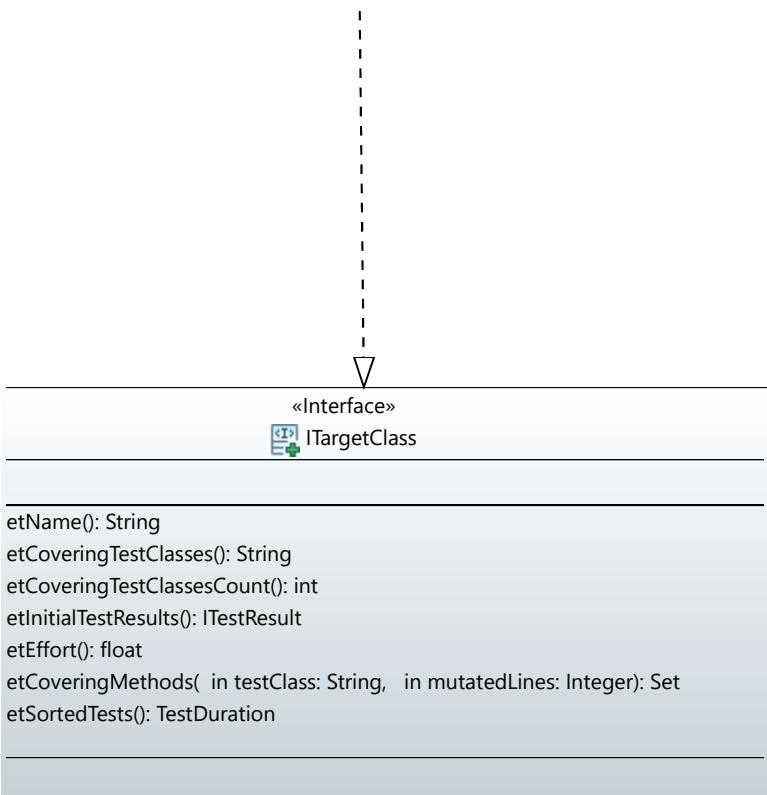


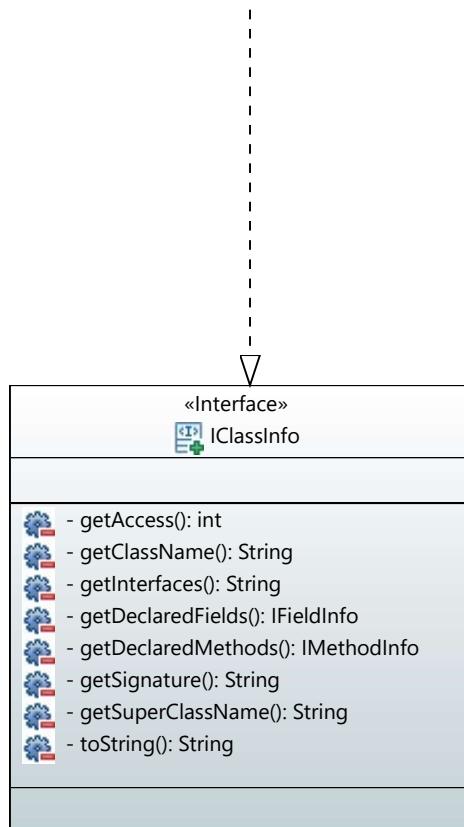


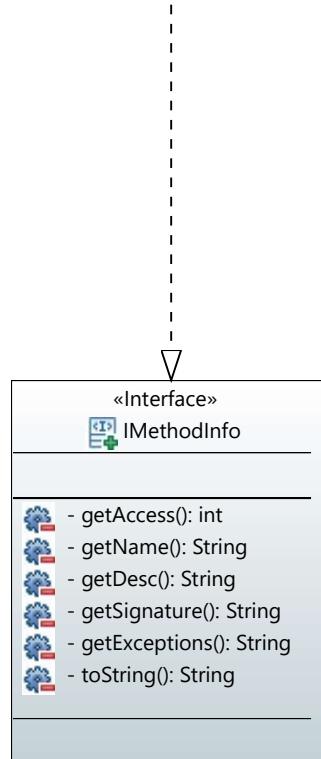


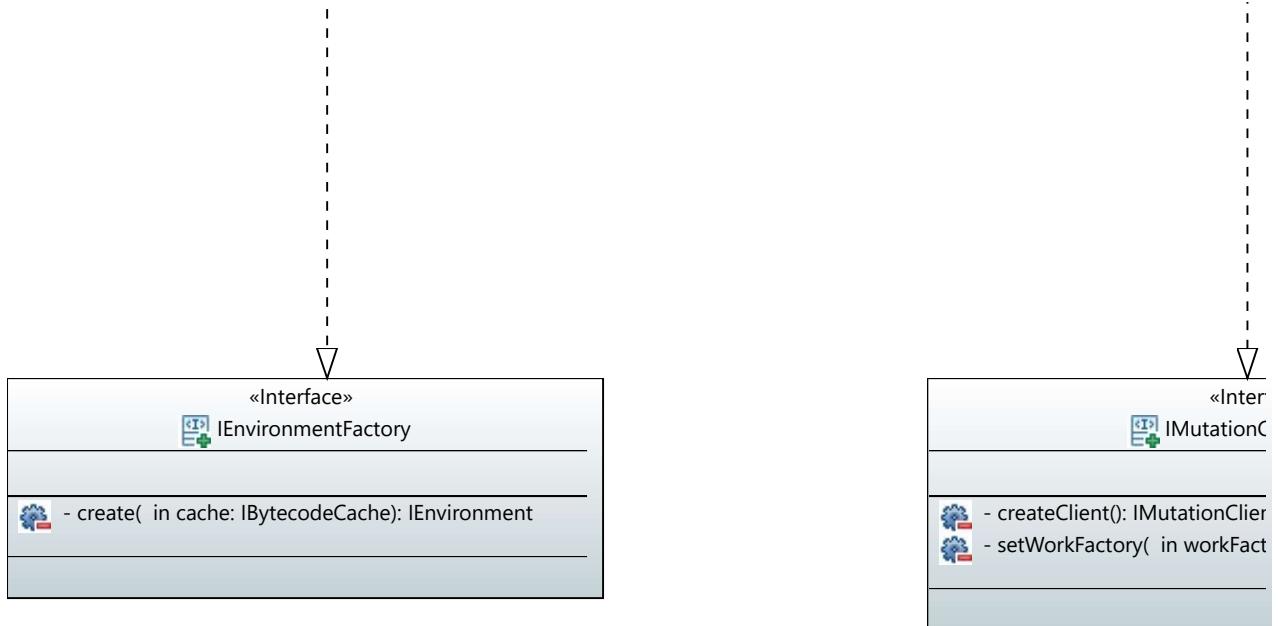












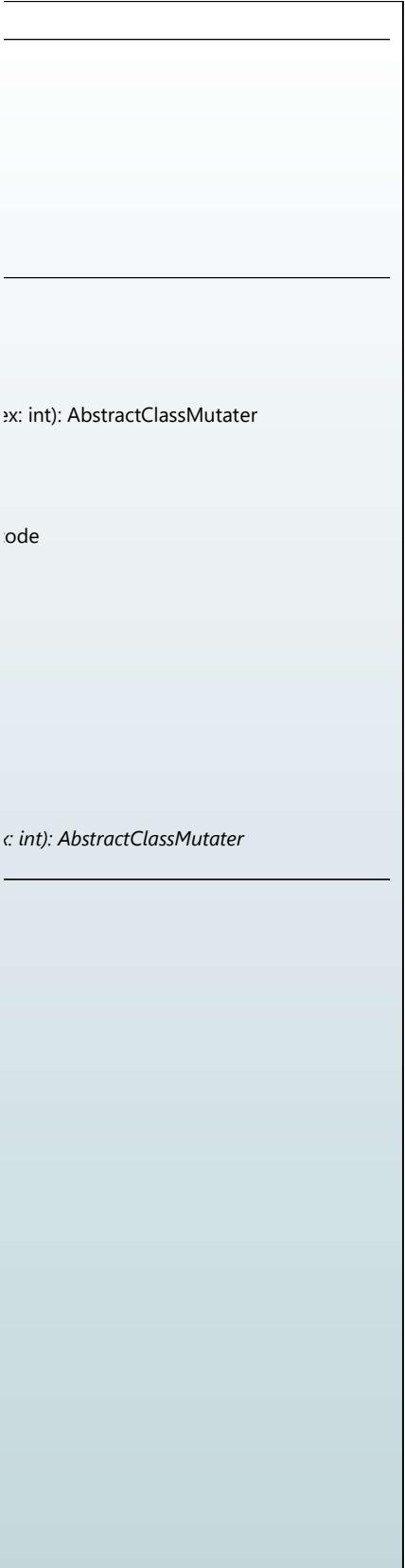
```
face»  
clientFactory  
_____  
nt  
:ory: IMutationWorkFactory)
```

InfiniteLoopGuard

- DESCRIPTION: String [1]
+ DEFAULT_TIMEOUT: long [1]
- timeout: long [1]
INIT: String [1]
CLINIT: String [1]
JAVA: String [1]
THIS: String [1]

«Create» + InfiniteLoopGuard()
«Create» + InfiniteLoopGuard(in timeout: long)
+ getDescription(): String
createCountingClassMutater(): AbstractClassMutater
createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int)
getWriterFlags(): int
+ getTimeout(): long
+ getMutationPoints(in bytecode: byte): IMutationPoint
+ mutate(in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate(in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
getReaderFlags(): int
getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment(in environment: IEnvironment)
getEnvironment(): IEnvironment
+ toString(): String
createCountingClassMutater(): AbstractClassMutater
createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int)

InfiniteLoopGuard
InfiniteLoopGuard
getDescription
createCountingClassMutater
createClassMutater
getWriterFlags
getTimeout
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
toString
verify
trace
trace



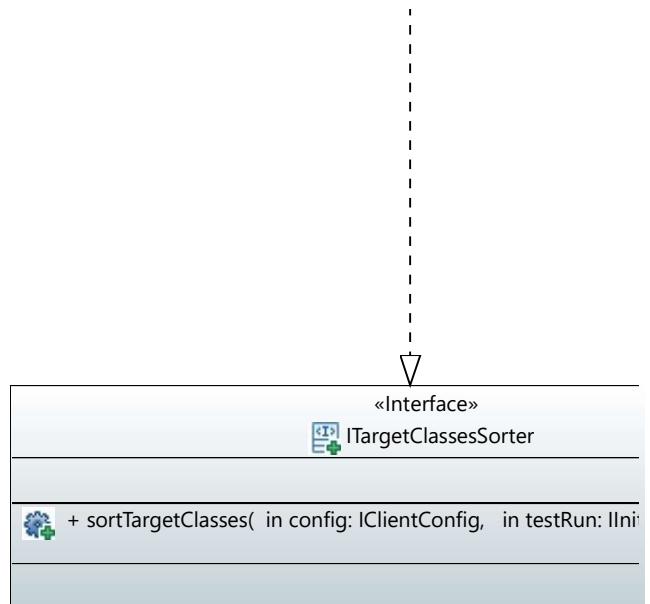
`ex: int): AbstractClassMutater`

`ode`

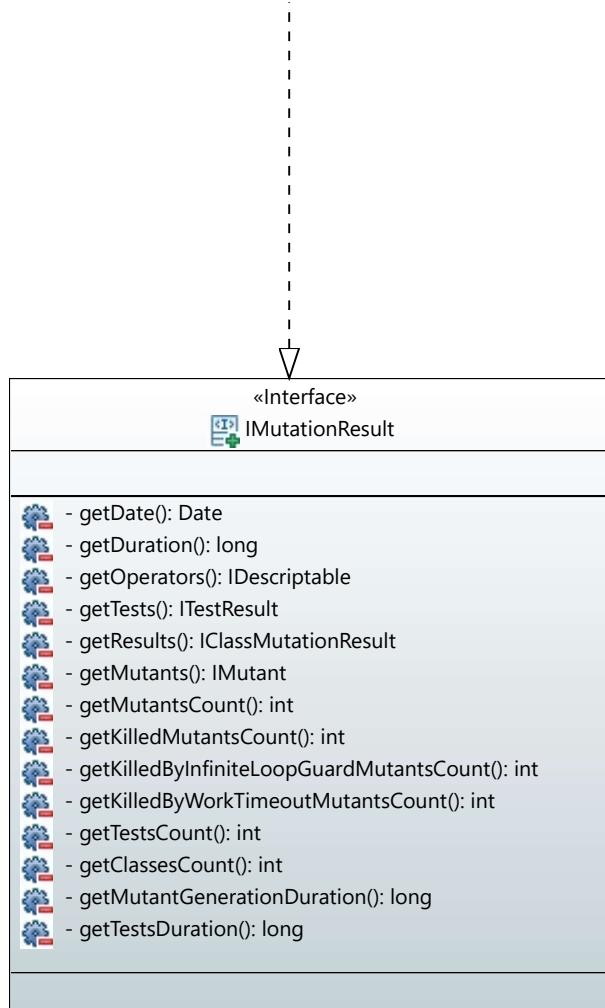
`c: int): AbstractClassMutater`

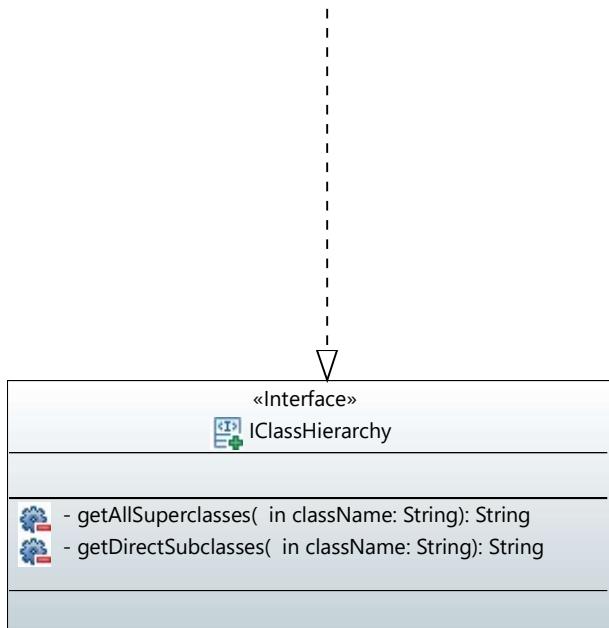


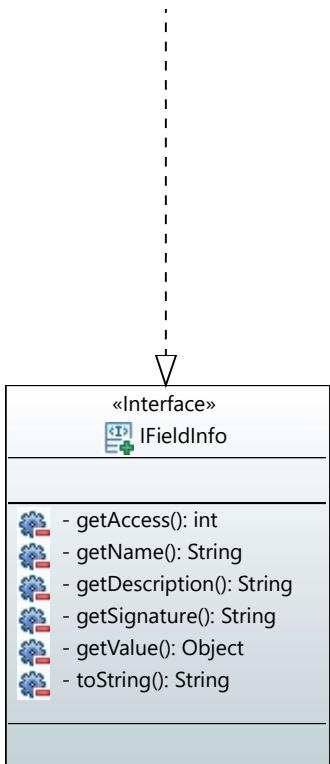


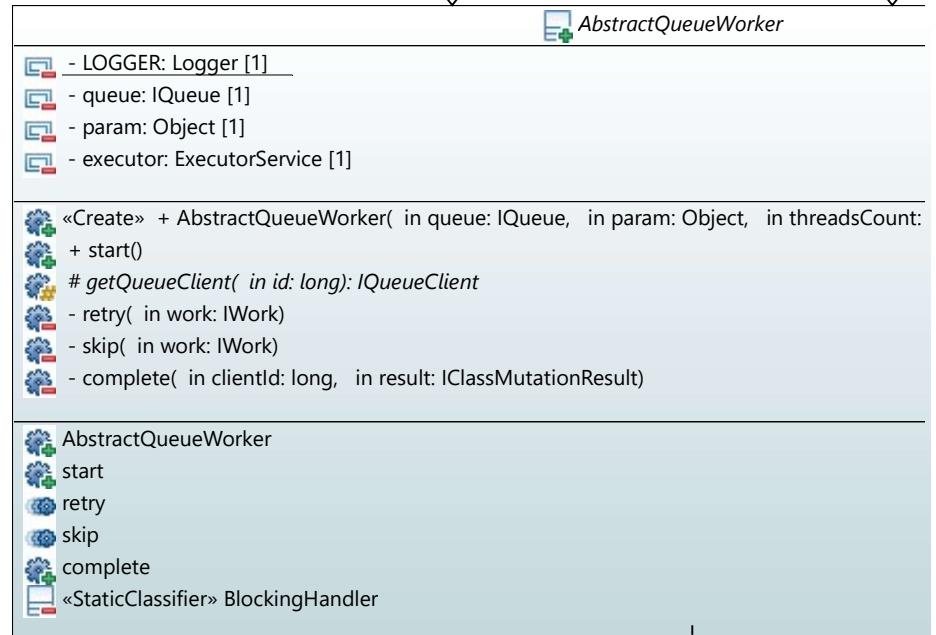


tialTestsRun)

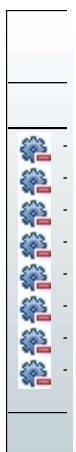


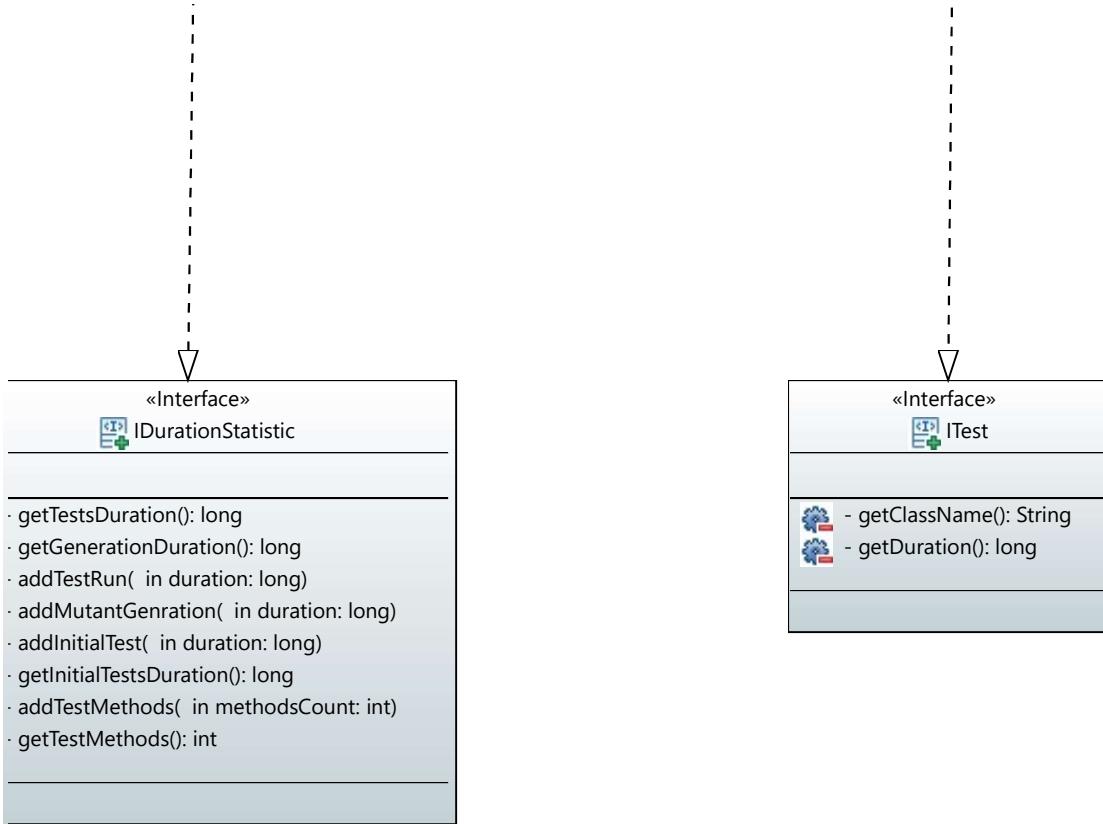


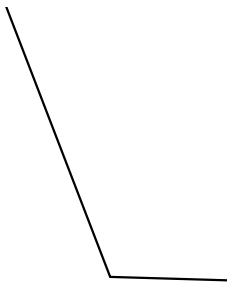




int, in workerQueueSize: int)









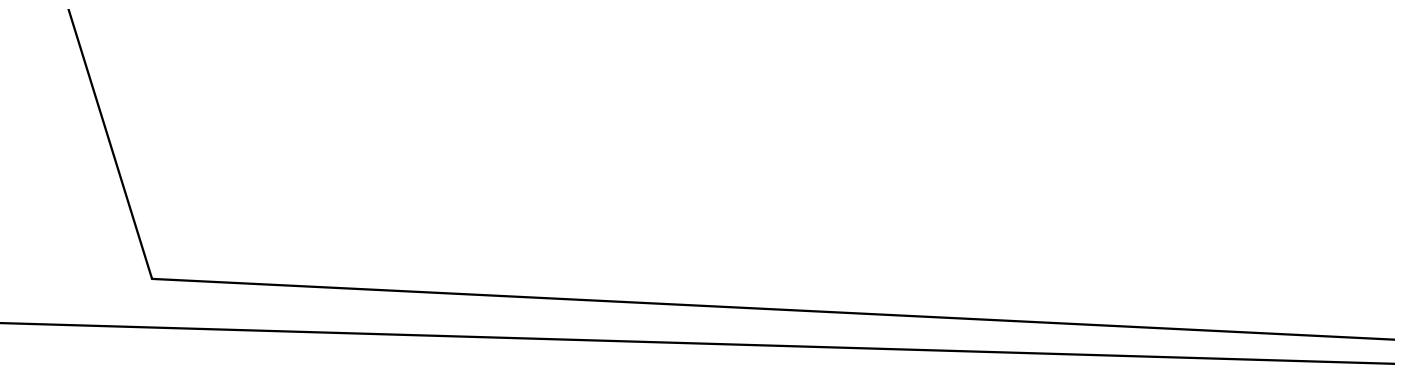


Diagram illustrating the inheritance relationship between `AbstractTreeMethodMutationC` and `AbstractClassMutater`.

`AbstractTreeMethodMutationC` inherits from `AbstractClassMutater` and implements `IMutationPoint` and `IMutantBytecode`.

`AbstractTreeMethodMutationC` has the following fields:

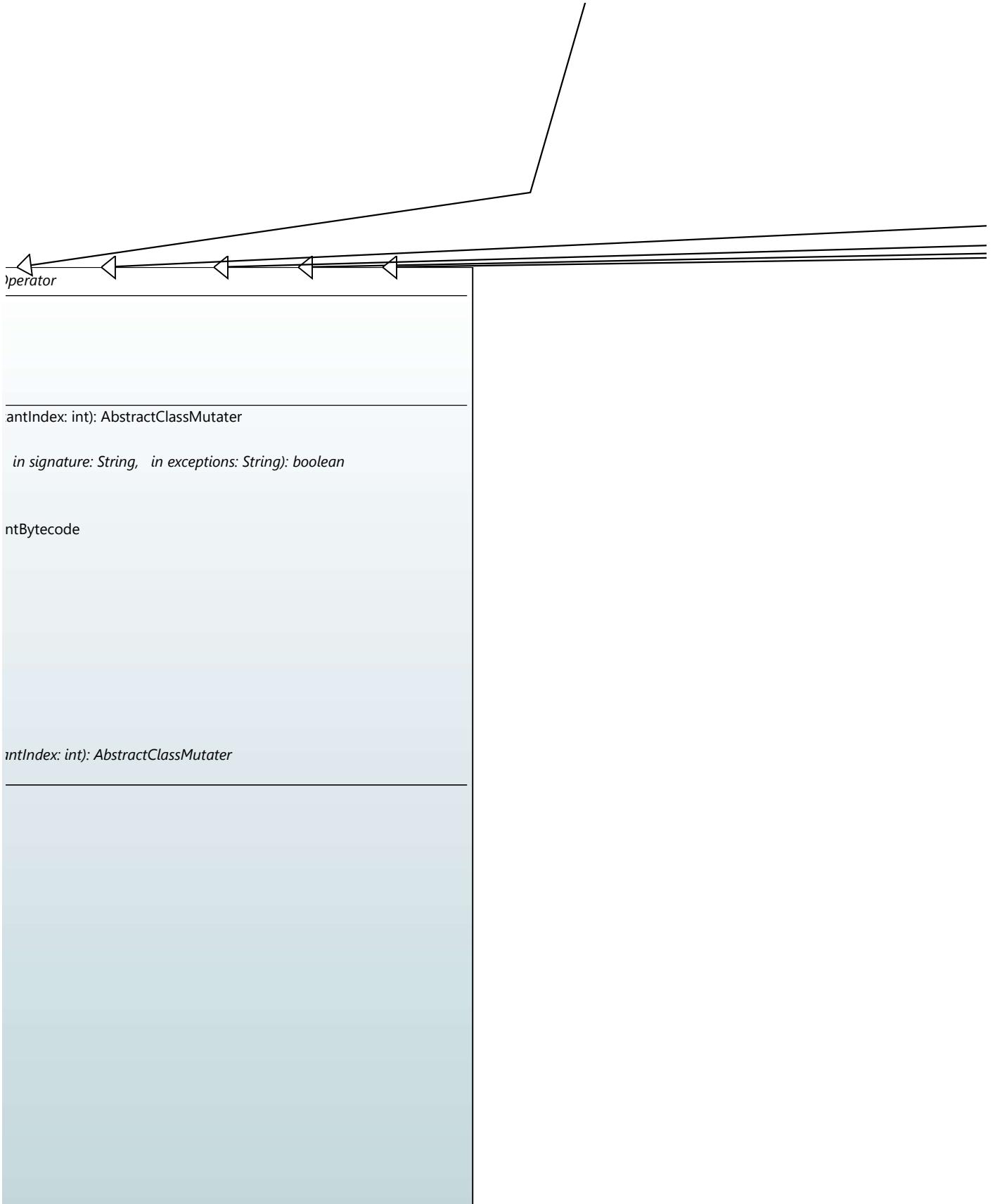
- # INIT: String [1]
- # CLINIT: String [1]
- # JAVA: String [1]
- # THIS: String [1]

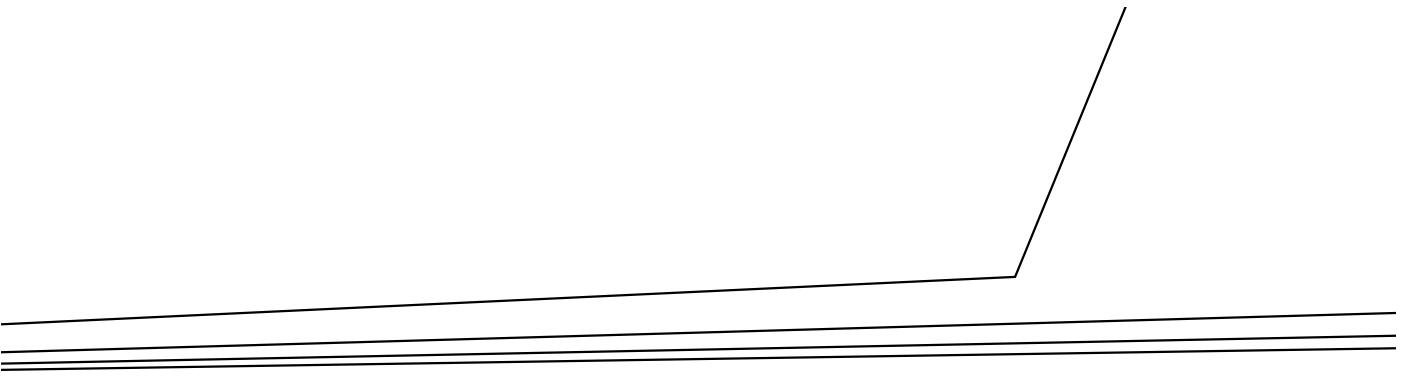
`AbstractTreeMethodMutationC` has the following methods:

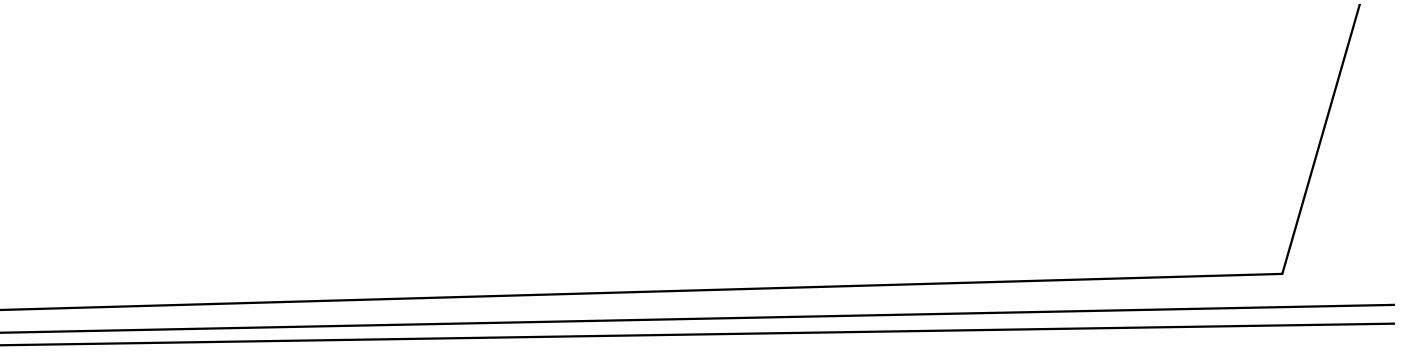
- # createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutatorFlags: int): AbstractClassMutater
- # checkMethod(in className: String, in access: int, in name: String, in desc: String, in signature: String): MethodNode
- # mutate(in mn: MethodNode, in cm: AbstractClassMutater)
- + getMutationPoints(in bytecode: byte): IMutationPoint
- + mutate(in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
- + mutate(in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
- # getReaderFlags(): int
- # getWriterFlags(): int
- + getName(): String
- + getDescription(): String
- + setEnvironment(in environment: IEnvironment)
- # getEnvironment(): IEnvironment
- + toString(): String
- # createCountingClassMutater(): AbstractClassMutater
- # createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutatorFlags: int): AbstractClassMutater

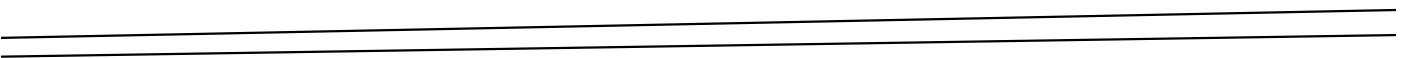
`AbstractClassMutater` has the following methods:

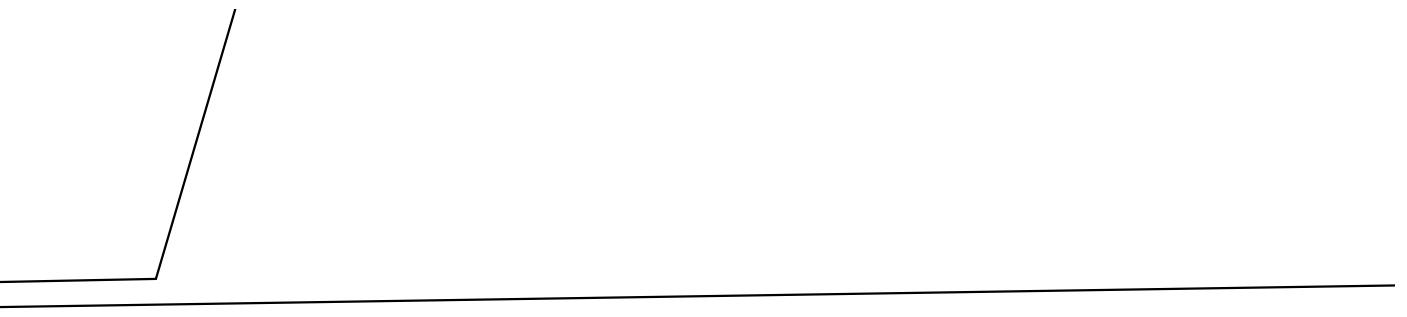
- createClassMutater
- createCountingClassMutater
- ClassMutater
- getMutationPoints
- mutate
- mutate
- mutate
- createClassWriter
- getReaderFlags
- getWriterFlags
- getName
- getDescription
- setEnvironment
- getEnvironment
- toString
- verify
- trace
- trace

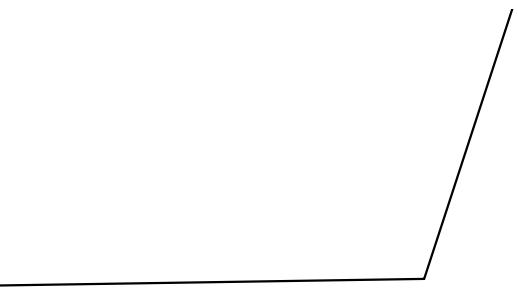












```

# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mu
# checkMethodInsn( in className: String, in opcode: in
# countMethodInsnReplacements( in className: String,
# getMethodInsnReplacement( in className: String, in
# mutateMethodInsn( in mv: MethodVisitor, in classNa
+ getMutationPoints( in bytecode: byte): IMutationPoin
+ mutate( in bytecode: byte, in mutationPointIndex: in
+ mutate( in bytecode: byte, in mutationPoint: IMutati
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment( in environment: IEnvironment)
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mu

createCountingClassMutater
createClassMutater
ClassMutater
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
toString
verify
trace
trace

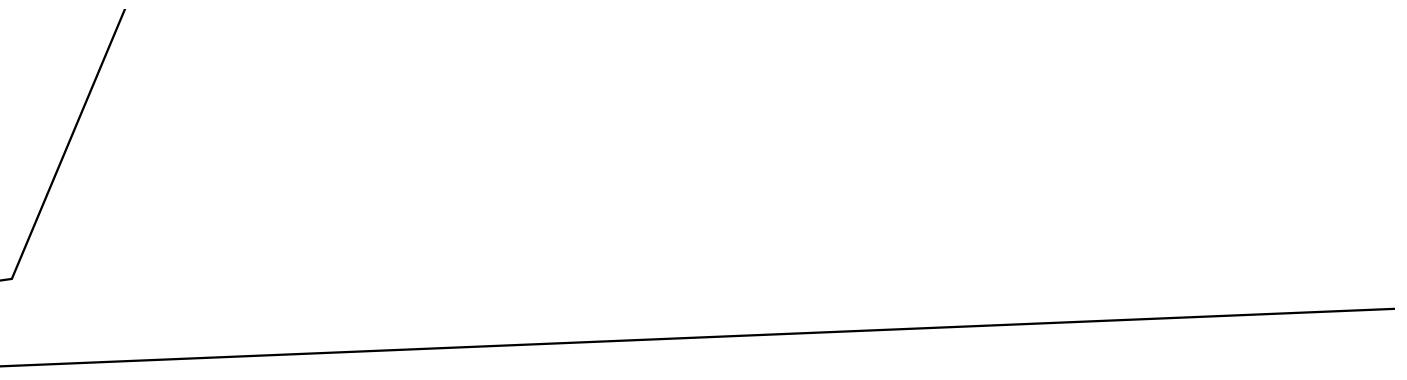
```

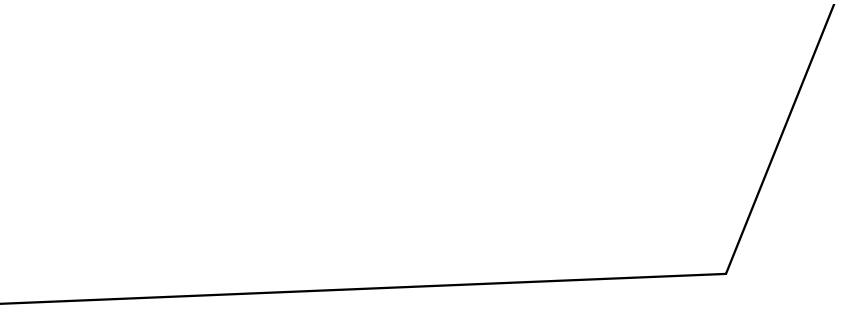


AbstractMethodCallReplacemetOperator

```
utationPointIndex: int, in mutantIndex: int): AbstractClassMutater  
t, in owner: String, in name: String, in desc: String): boolean  
in opcode: int, in owner: String, in name: String, in desc: String): int  
opcode: int, in owner: String, in name: String, in desc: String, in mutantIndex: int): T  
ne: String, in opcode: int, in owner: String, in name: String, in desc: String, in replacement: T, in itf: boolean)  
t  
t, in mutantIndex: int): IMutantBytecode  
onPoint): IMutantBytecode
```

```
itationPointIndex: int, in mutantIndex: int): AbstractClassMutater
```

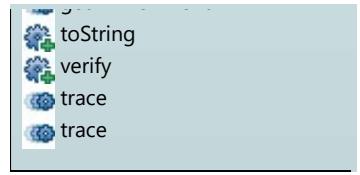


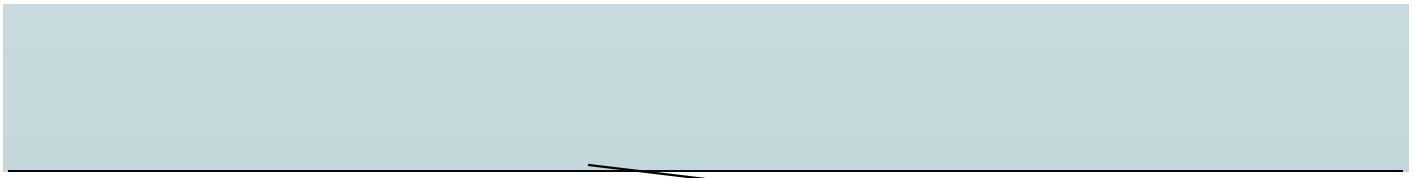




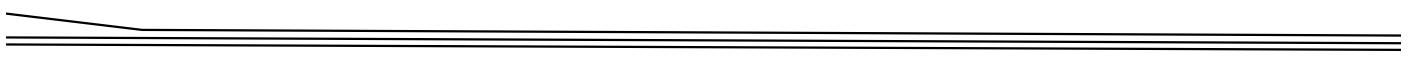
```
  • toString  
  • verify  
  • trace  
  • trace
```

toString
verify
trace
trace

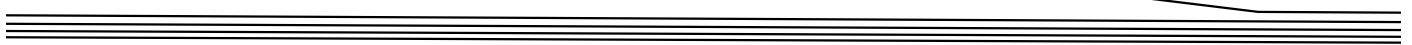




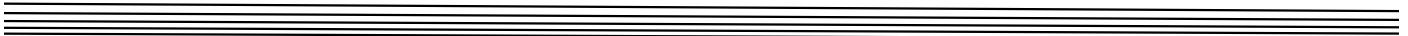
toString
verify
trace
trace

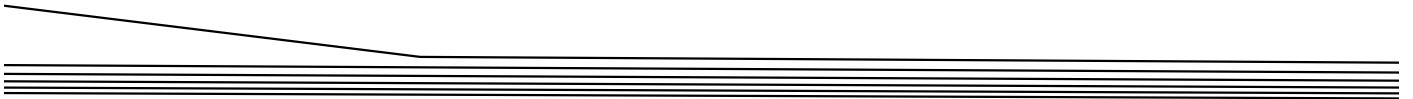


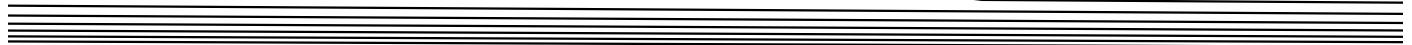
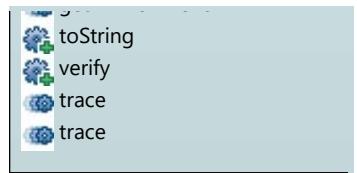
toString
verify
trace
trace

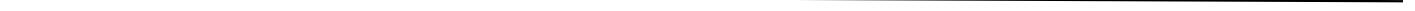
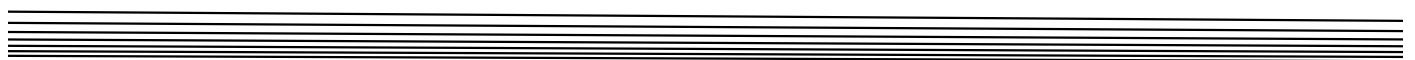
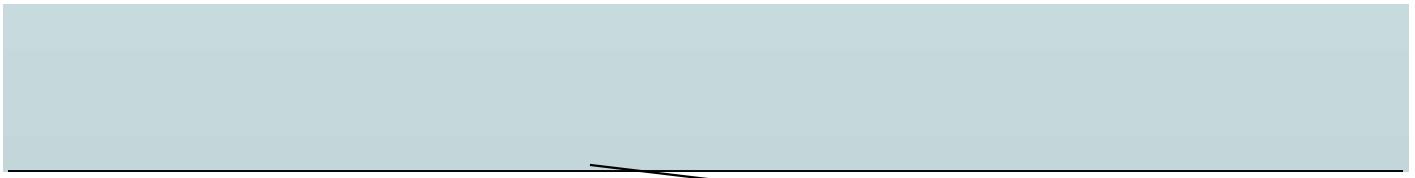


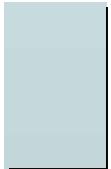
```
  toString
  verify
  trace
  trace
```





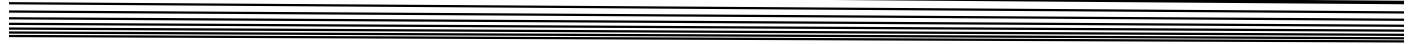






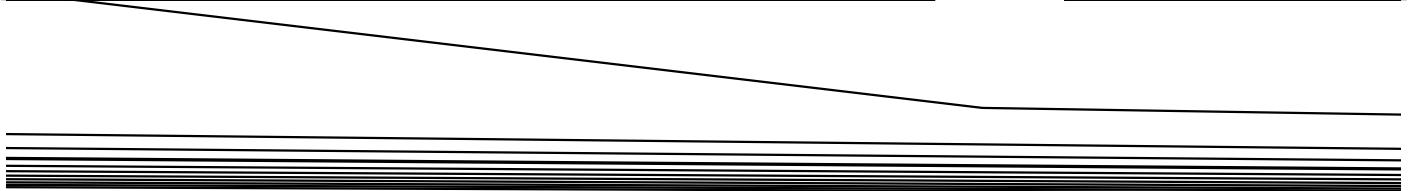
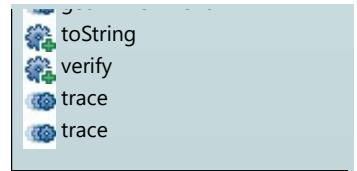
```
getName  
getDescription  
setEnvironment  
getEnvironment  
toString  
verify  
trace  
trace
```

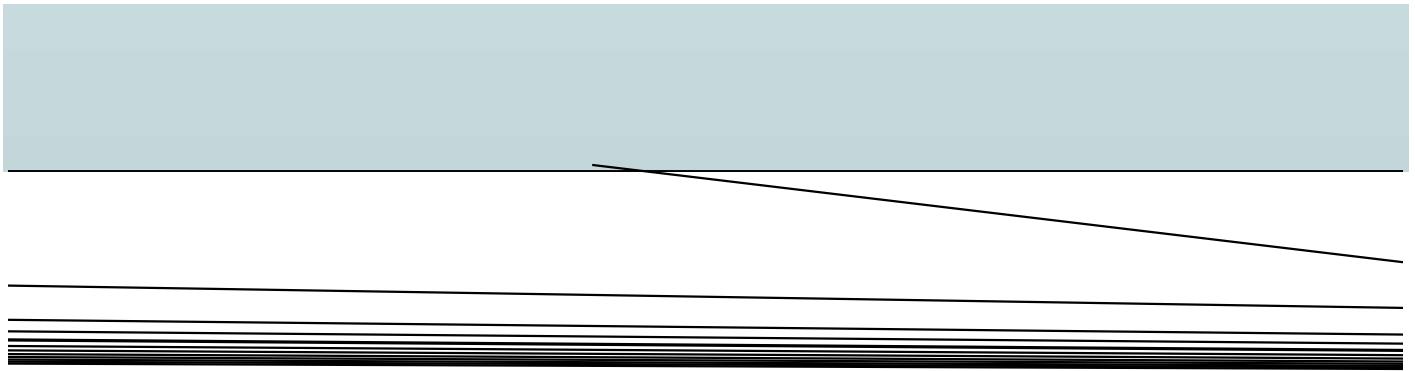
 getName
 getDescription
 setEnvironment
 getEnvironment
 toString
 verify
 trace
 trace



```
getName  
getDescription  
setEnvironment  
getEnvironment  
toString  
verify  
trace  
trace
```

toString
verify
trace
trace





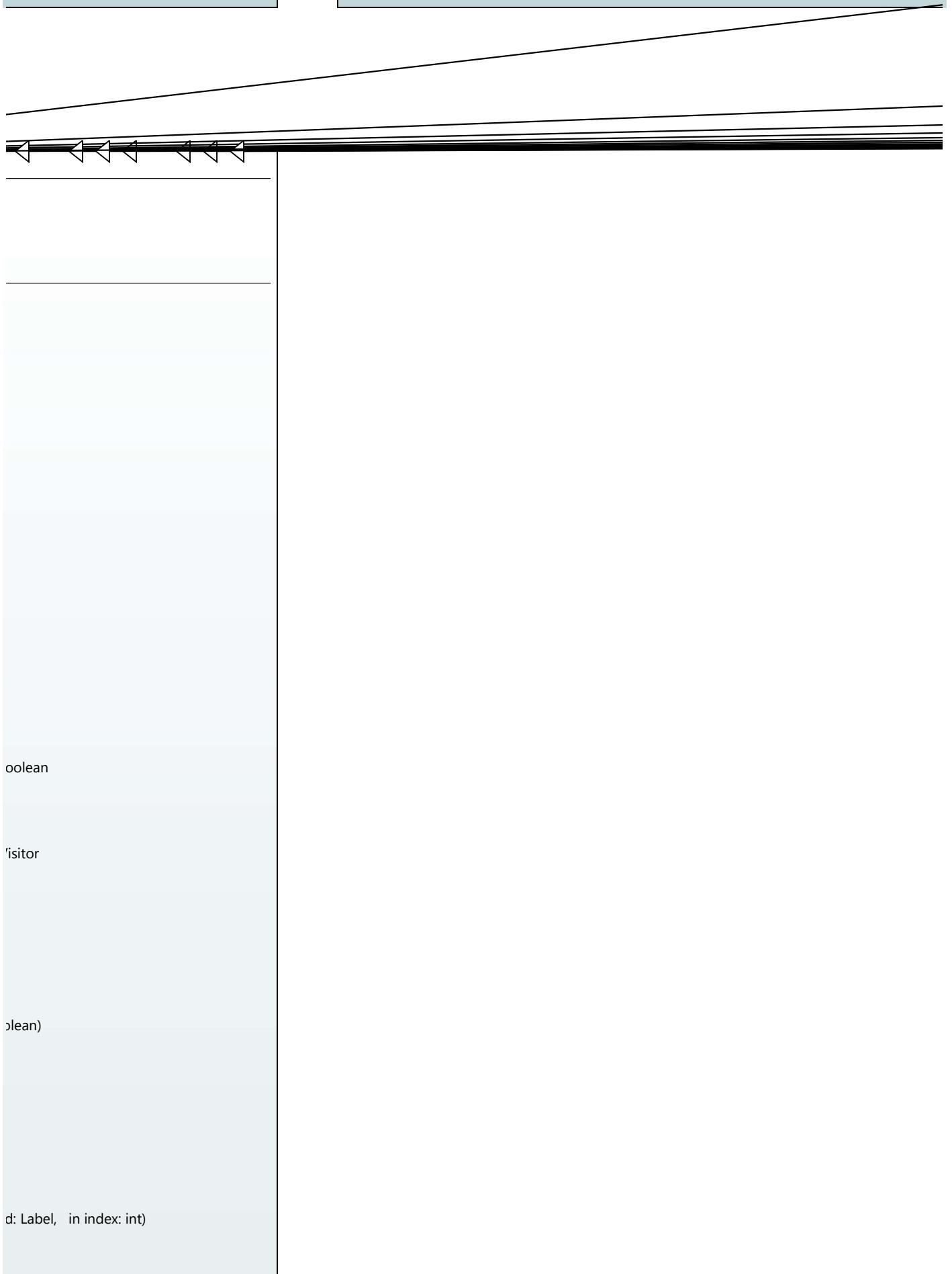


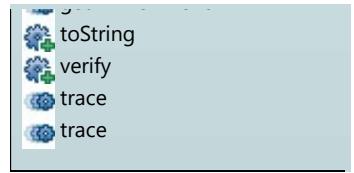
toString
verify
trace
trace

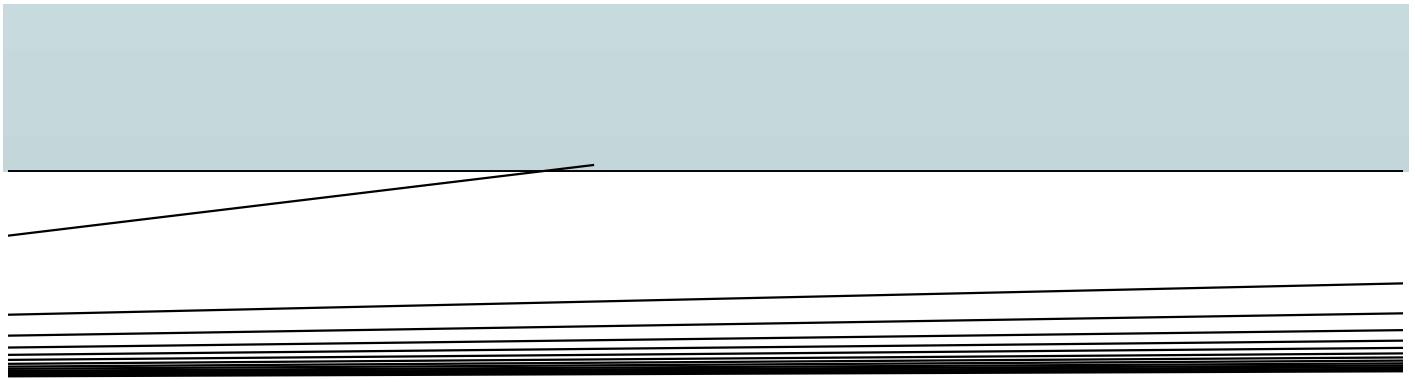

```
toString  
verify  
trace  
trace
```

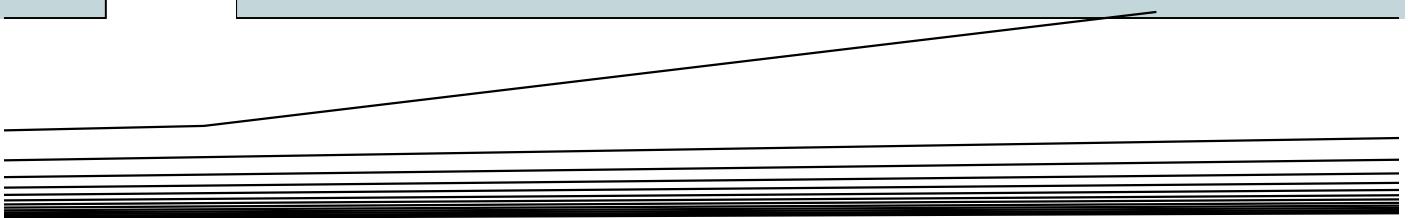
```
AbstractCoreMethodMutationOperator
```

```
# INIT: String [1]  
# CLINIT: String [1]  
# JAVA: String [1]  
# THIS: String [1]  
  
# createCountingClassMutater(): AbstractClassMutater  
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater  
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean  
# checkAnnotationDefault( in className: String): boolean  
# checkAnnotation( in className: String, in desc: String, in visible: boolean): boolean  
# checkParameterAnnotation( in className: String, in parameter: int, in desc: String, in visible: boolean): boolean  
# checkAttribute( in className: String, in attr: Attribute): boolean  
# checkCode( in className: String): boolean  
# checkInsn( in className: String, in opcode: int): boolean  
# checkIntInsn( in className: String, in opcode: int, in operand: int): boolean  
# checkVarInsn( in className: String, in opcode: int, in var: int): boolean  
# checkTypeInsn( in className: String, in opcode: int, in type: String): boolean  
# checkFieldInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean  
# checkMethodInsn( in className: String, in opcode: int, in owner: String, in name: String, in desc: String): boolean  
# checkJumpInsn( in className: String, in opcode: int, in label: Label): boolean  
# checkLabel( in className: String, in label: Label): boolean  
# checkLdcInsn( in className: String, in cst: Object): boolean  
# checkInclnInsn( in className: String, in var: int, in increment: int): boolean  
# checkTableSwitchInsn( in className: String, in min: int, in max: int, in dflt: Label, in labels: Label): boolean  
# checkLookupSwitchInsn( in className: String, in dflt: Label, in keys: int, in labels: Label): boolean  
# checkMultiANewArrayInsn( in className: String, in desc: String, in dims: int): boolean  
# checkTryCatchBlock( in className: String, in start: Label, in end: Label, in handler: Label, in type: String): boolean  
# checkLocalVariable( in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label, in index: int): boolean  
# checkEnd( in className: String): boolean  
# mutateAnnotationDefault( in mv: MethodVisitor, in className: String): AnnotationVisitor  
# mutateAnnotation( in mv: MethodVisitor, in className: String, in desc: String, in visible: boolean): AnnotationVisitor  
# mutateParameterAnnotation( in mv: MethodVisitor, in className: String, in parameter: int, in desc: String, in visible: boolean): AnnotationVisitor  
# mutateAttribute( in mv: MethodVisitor, in className: String, in attr: Attribute)  
# mutateCode( in mv: MethodVisitor, in className: String)  
# mutateInsn( in mv: MethodVisitor, in className: String, in opcode: int)  
# mutateIntInsn( in mv: MethodVisitor, in className: String, in opcode: int, in operand: int)  
# mutateVarInsn( in mv: MethodVisitor, in className: String, in opcode: int, in var: int)  
# mutateTypeInsn( in mv: MethodVisitor, in className: String, in opcode: int, in type: String)  
# mutateFieldInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String)  
# mutateMethodInsn( in mv: MethodVisitor, in className: String, in opcode: int, in owner: String, in name: String, in desc: String, in itf: boolean)  
# mutateJumpInsn( in mv: MethodVisitor, in className: String, in opcode: int, in label: Label)  
# mutateLabel( in mv: MethodVisitor, in className: String, in label: Label)  
# mutateLdcInsn( in mv: MethodVisitor, in className: String, in cst: Object)  
# mutateInclnInsn( in mv: MethodVisitor, in className: String, in var: int, in increment: int)  
# mutateTableSwitchInsn( in mv: MethodVisitor, in className: String, in min: int, in max: int, in dflt: Label, in labels: Label)  
# mutateLookupSwitchInsn( in mv: MethodVisitor, in className: String, in dflt: Label, in keys: int, in labels: Label)  
# mutateMultiANewArrayInsn( in mv: MethodVisitor, in className: String, in desc: String, in dims: int)  
# mutateTryCatchBlock( in mv: MethodVisitor, in className: String, in start: Label, in end: Label, in handler: Label, in type: String)  
# mutateLocalVariable( in mv: MethodVisitor, in className: String, in name: String, in desc: String, in signature: String, in start: Label, in end: Label)  
# mutateEnd( in mv: MethodVisitor, in className: String)  
+ getMutationPoints( in bytecode: byte): IMutationPoint
```









toString
verify
trace
trace

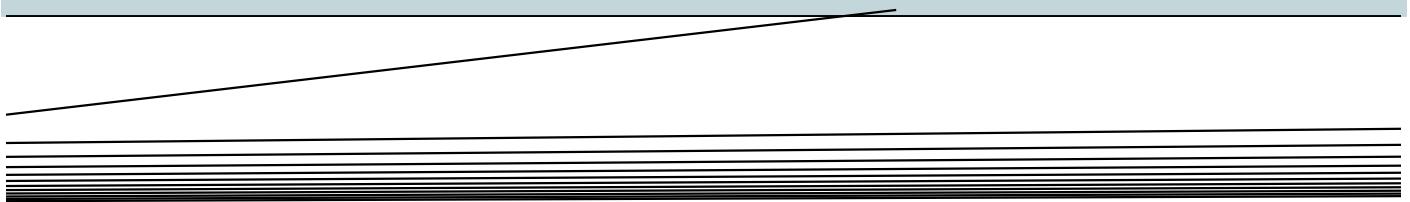




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toString
verify
trace
trace





toString



verify

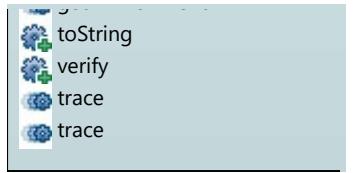
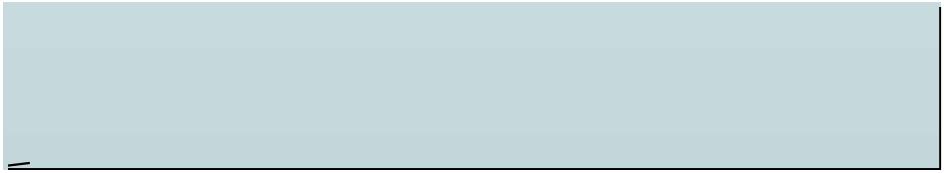


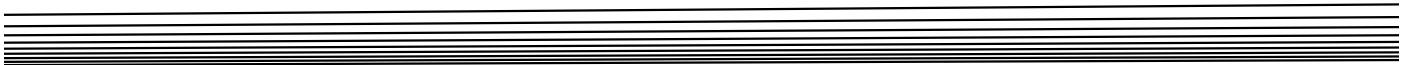
trace

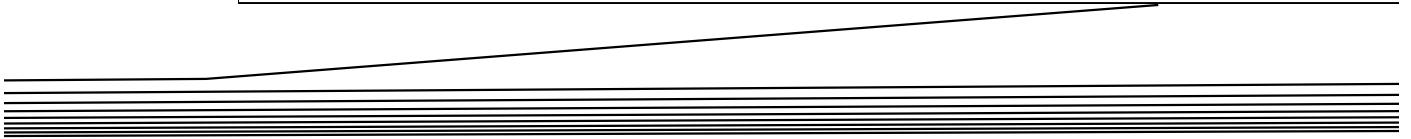


trace





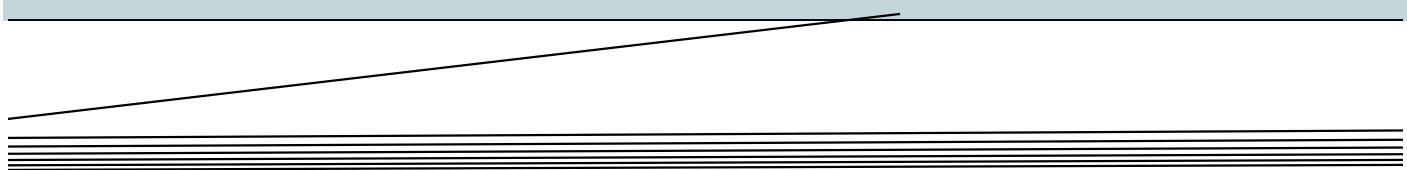




setEnvironment
getEnvironment
toString
verify
trace
trace



 [toString](#)
 [verify](#)
 [trace](#)
 [trace](#)





toString



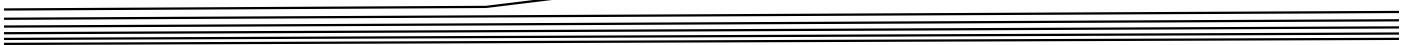
verify

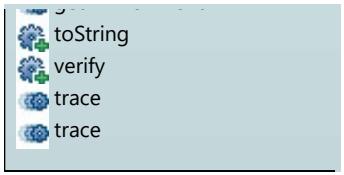


trace



trace









 `toString`
 `verify`
 `trace`
 `trace`





—

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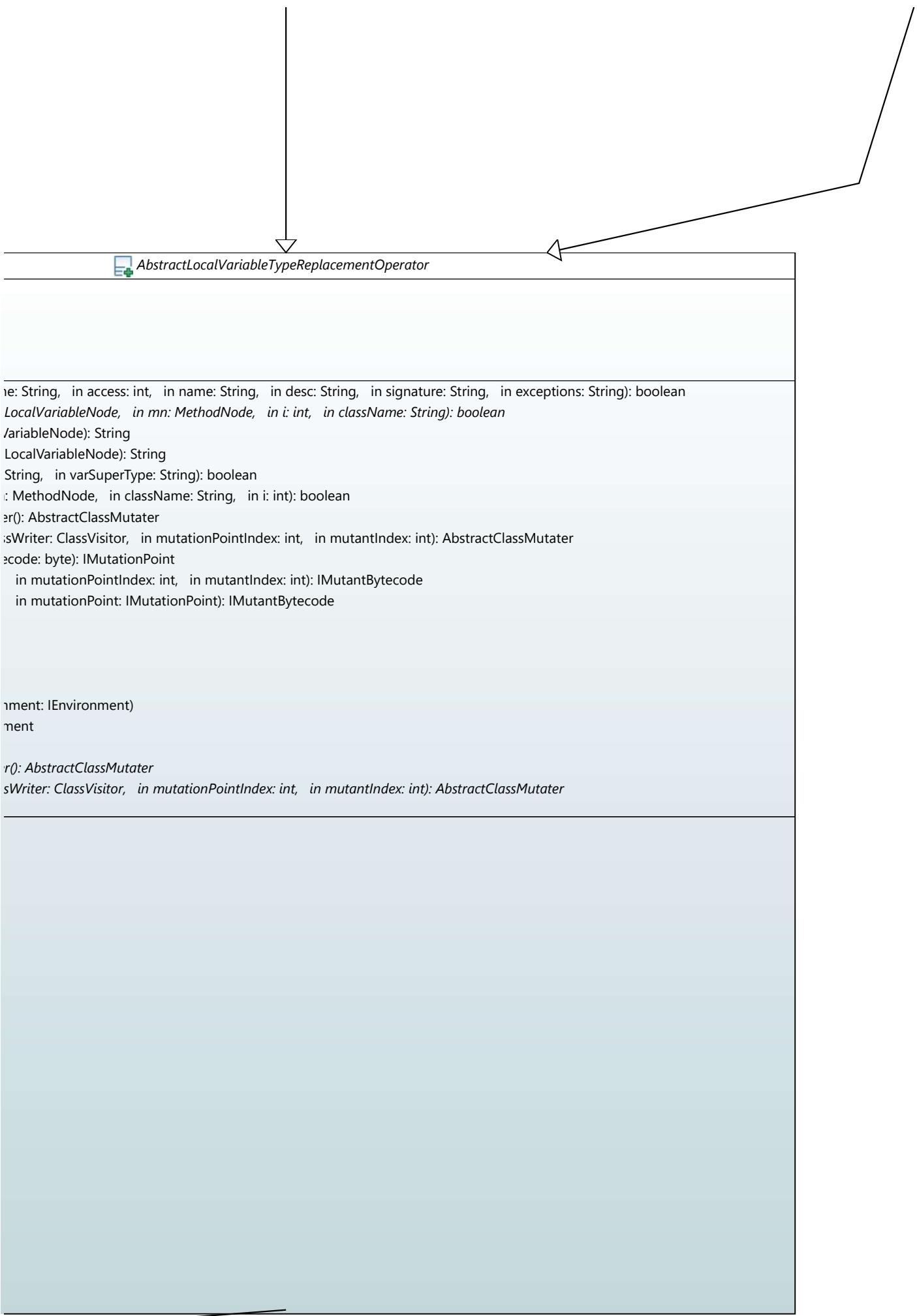
toString
verify
trace
trace

 **toString**
 **verify**
 **trace**
 **trace**

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

# checkMethod( in className)
# checkVariable( in variable)
# getType( in variable: Local)
# getSuperType( in variable: Local)
# hasSuperType( in varType)
# isMethodArgument( in mn)
# createCountingClassMutate()
# createClassMutater( in clas)
+ getMutationPoints( in bytecode)
+ mutate( in bytecode: byte)
+ mutate( in bytecode: byte,
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment( in enviror)
# getEnvironment(): IEnviron
+ toString(): String
# createCountingClassMutate()
# createClassMutater( in clas)

checkMethod
getType
getSuperType
hasSuperType
isMethodArgument
createCountingClassMutate
createClassMutater
ClassMutater
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
toString
verify
trace
trace
```

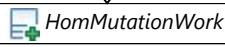



```

- serialVersionUID: long [1]
- objectives: ObjectiveCalculator [*]
- maxEvaluations: int [1]
- skipSameLineMutations: boolean [1]
- maxMutationOrder: int [1]
- filter: IMutantFilter [1]

«Create» + HomMutationWork( in clientId: long, in retries: int, in resultFormatter: MutationResultFormatter, in target
+ run( in workspace: Object): IClassMutationResult
- searchBestHom( in maxEvaluations: int): NondominatedPopulation
# createHomFactory(): HomFactory
# createDataCollector(): IHomDataCollector
# getObjectives(): ObjectiveCalculator
# getExecutor( in maxEvaluations: int): Executor
# getFilter(): IMutantFilter
# getMaxMutationOrder(): int
# createExecutor(): Executor
«Create» + MutationWork( in clientId: long, in retries: int, in resultFormatter: MutationResultFormatter, in targetClass
+ run( in workspace: Object): IClassMutationResult
# collectSummaryData(): MutationSummary
# computeInitialTestsDuration()
# init( in workspace: String)
# initReset()
# mutate(): IMutant
# getBytecode(): byte
# generateFoms( in bytecode: byte): IMutant
# getEvaluator(): IMutantEvaluator
+ getStatistic(): IDurationStatistic
+ setStatistic( in statistic: IDurationStatistic)
+ getKind(): ClassKind
+ setKind( in kind: ClassKind)
+ getTargetClass(): ITargetClass
+ getOperators(): IMutationOperator
+ setOperators( in operators: IMutationOperator)
+ getCache(): IBytecodeCache
+ setCache( in cache: IBytecodeCache)
+ getResultFormatter(): MutationResultFormatter
+ setResultFormatter( in resultFormatter: MutationResultFormatter)
+ getSerialVersionUID(): long
+ getClasspath(): String
+ getEnvFactory(): IEnvironmentFactory
+ getTesterFactory(): ITesterFactory
+ getOperatorsFactory(): IMutationOperatorsFactory
+ getMaxInfiniteLoopGuardTimeout(): long
+ getTester(): ITester
+ setTester( in tester: ITeser)
+ setEvaluator( in evaluator: IMutantEvaluator)
+ getLOGGER(): Logger
+ getWorkspace(): String
«Create» + AbstractWork( in clientId: long, in retries: int)
+ getClientId(): long

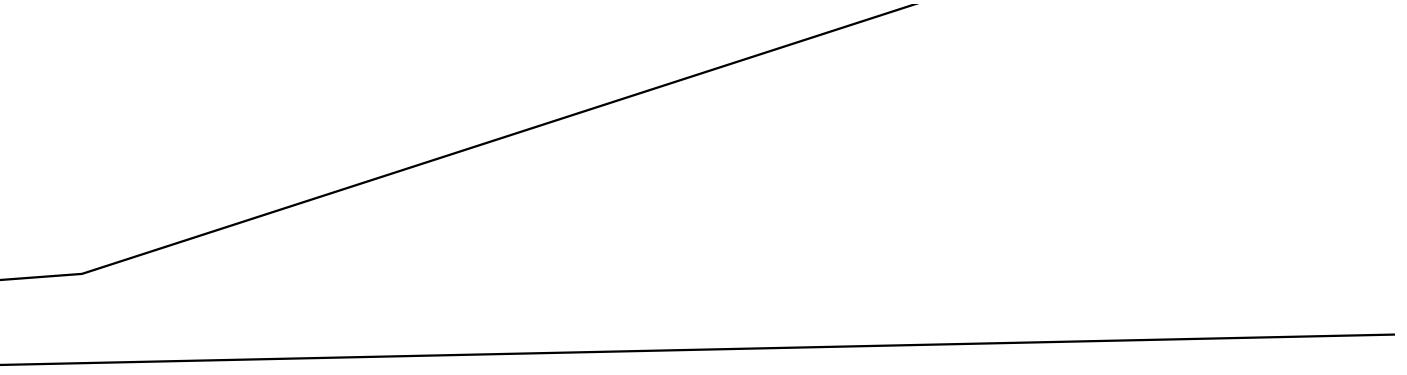
```



Class: ITargetClass, in classpath: String, in testerFactory: ITes

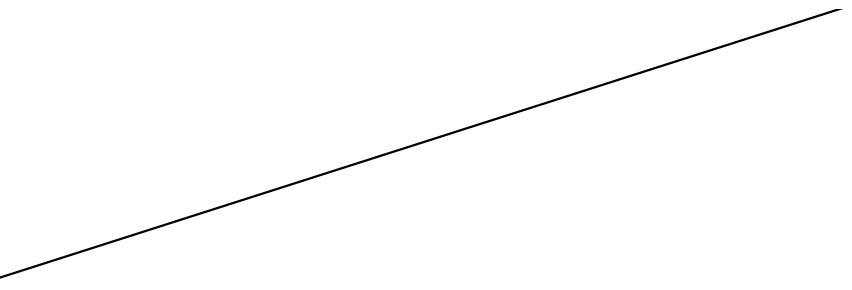
: ITargetClass, in classpath: String, in testerFactory: ITes

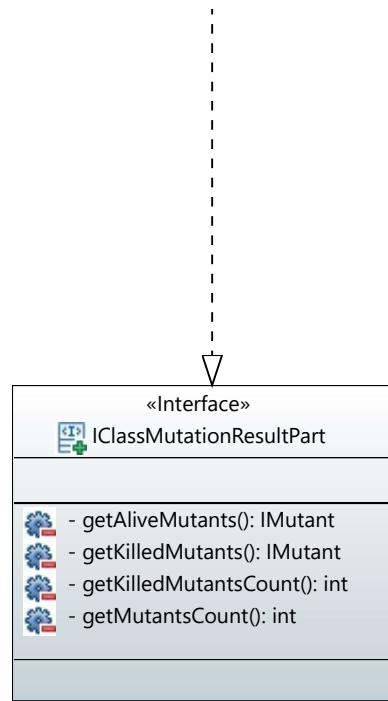


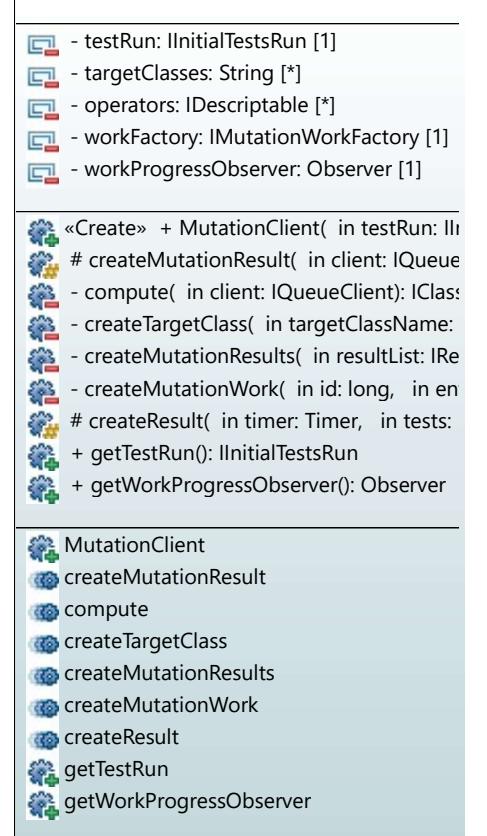


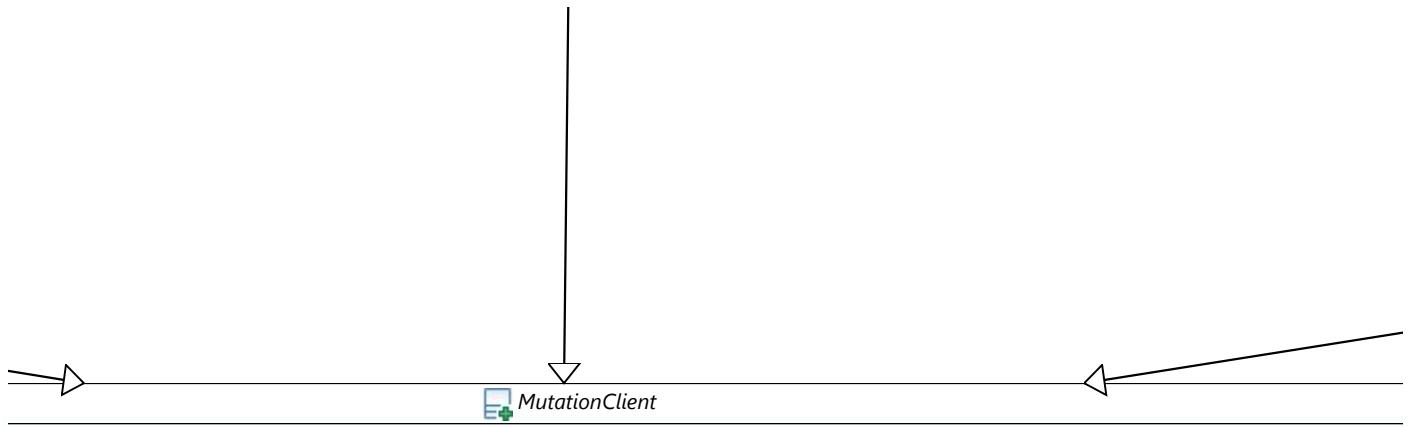






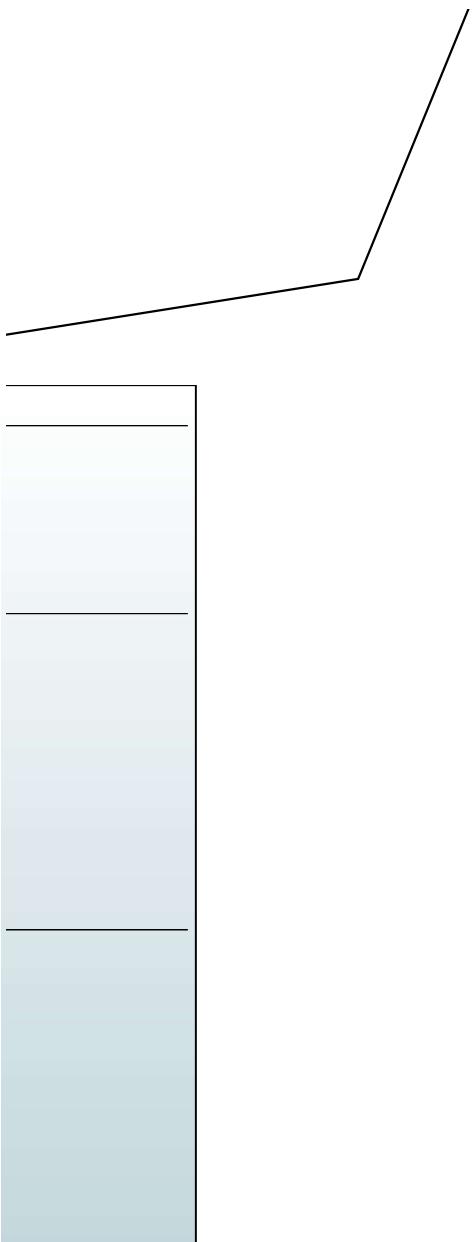




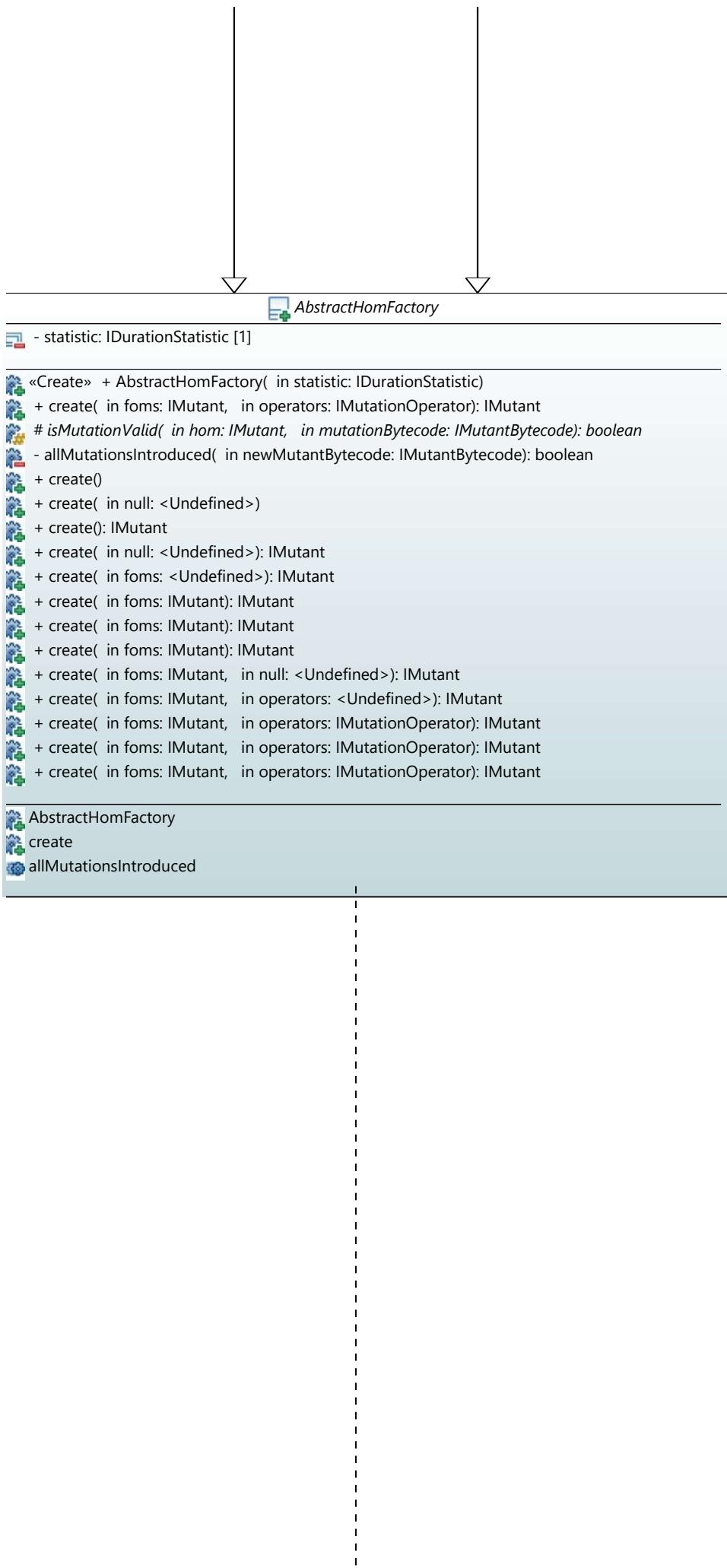


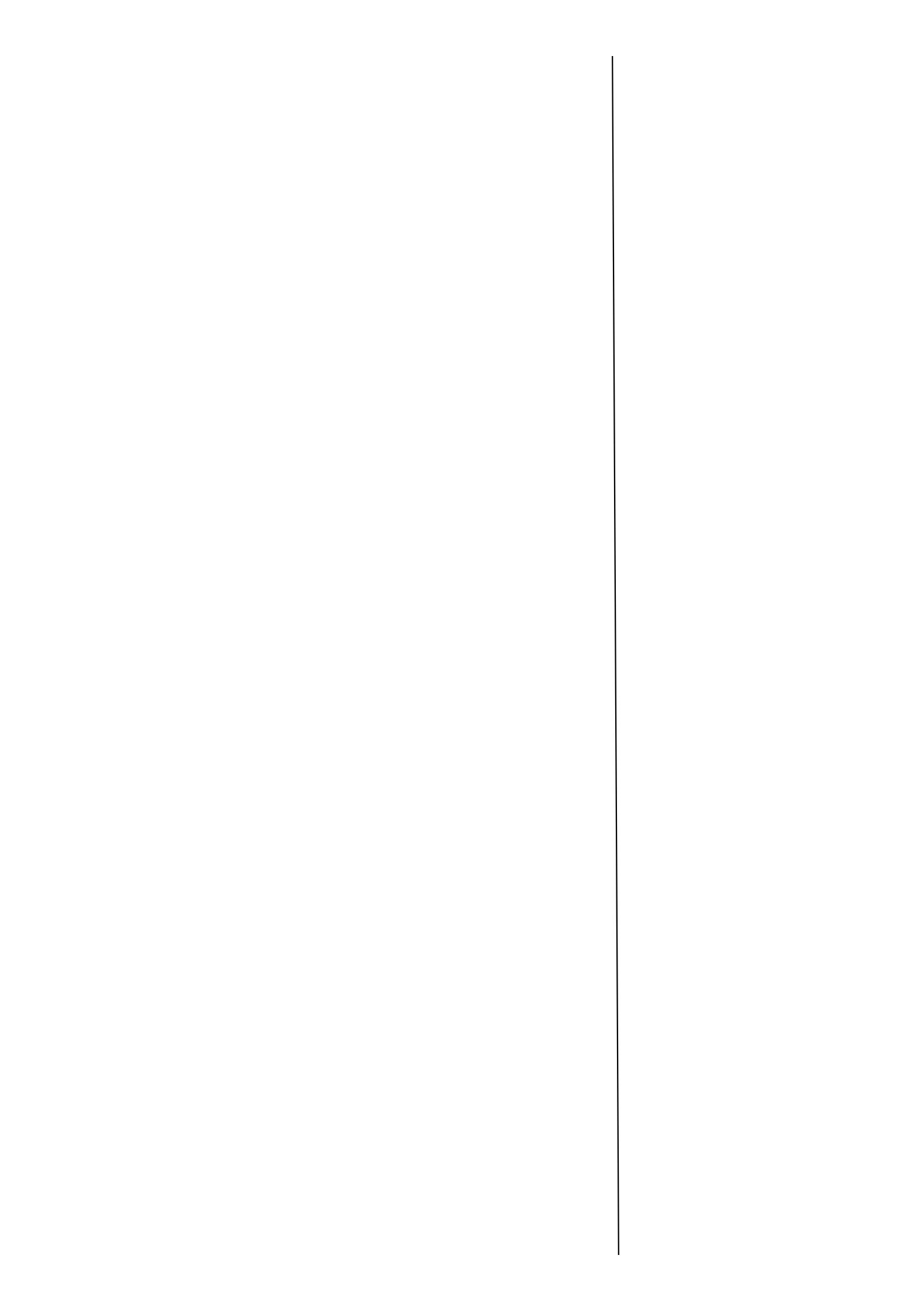
```
initialTestsRun, in targetClasses: String, in operators: IDescribable, in workFactory: IMutationWorkFactory, in workProgressObserver: Observer)  
:Client): IMutationResult  
sMutationResult  
String, in estimatedEffort: float): TargetClass  
sult): IClassMutationResult  
vFactory: IEnvironmentFactory, in targetClass: TargetClass): IWork  
lInitialTestsRun, in results: IClassMutationResult): IMutationResult
```

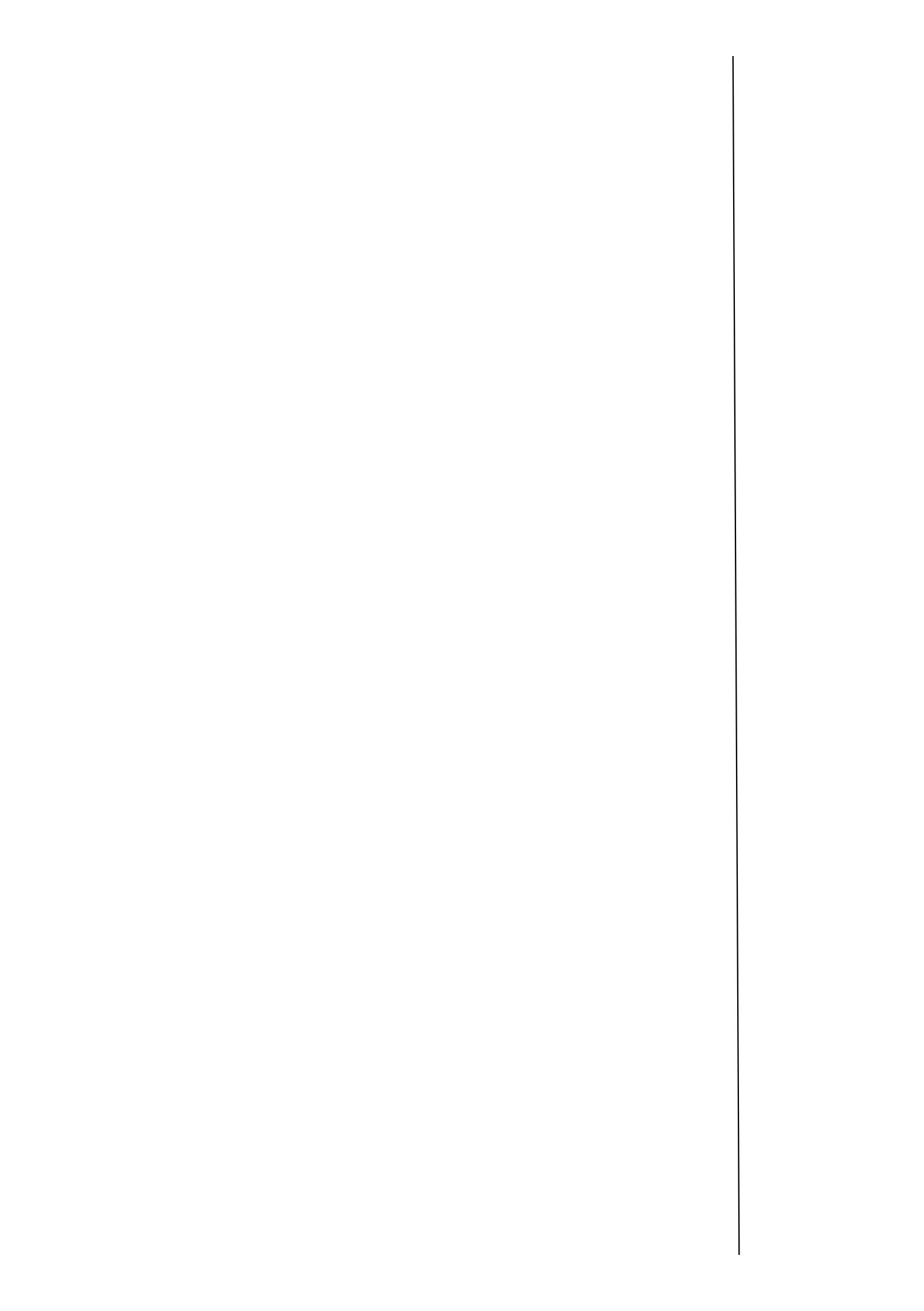


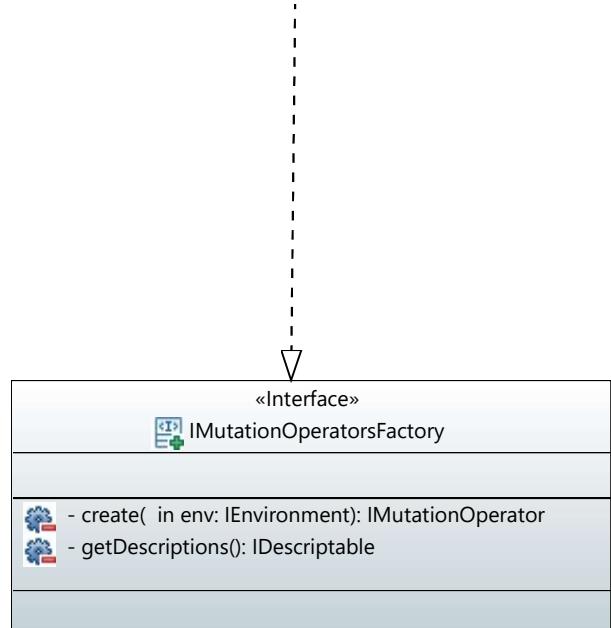


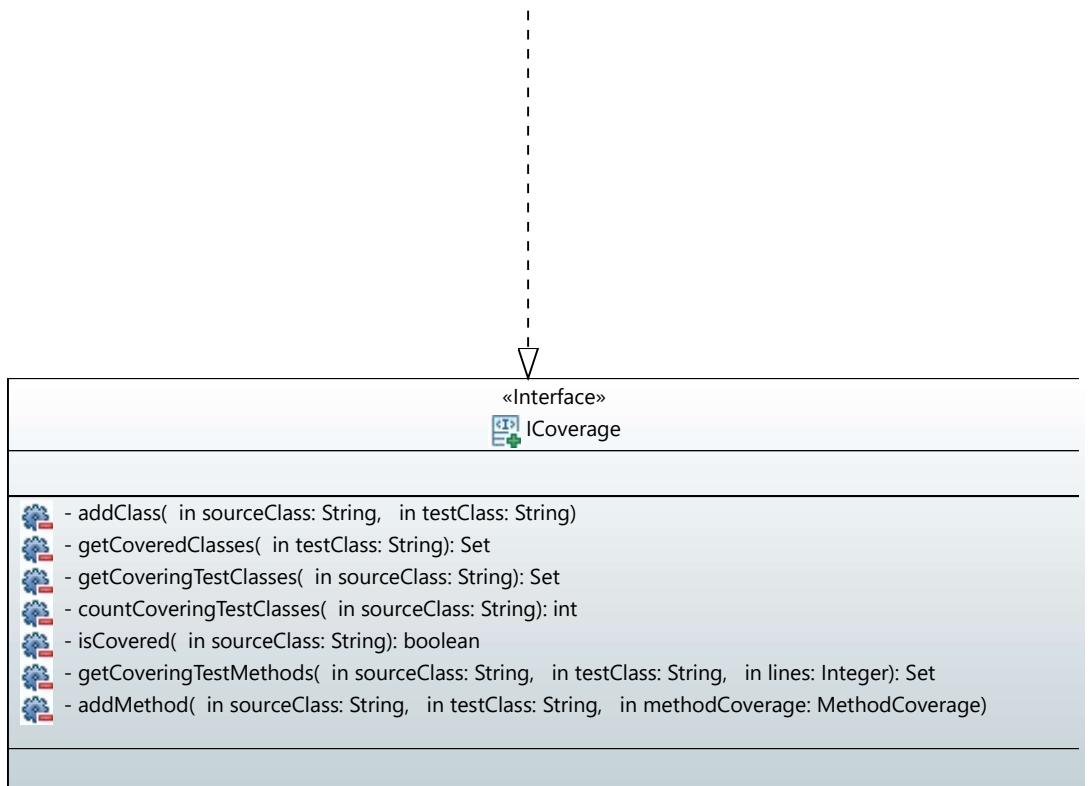


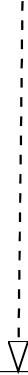








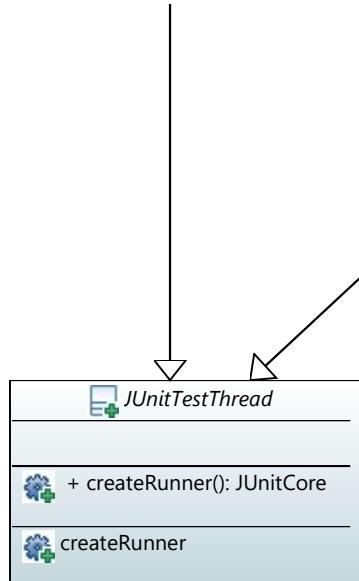




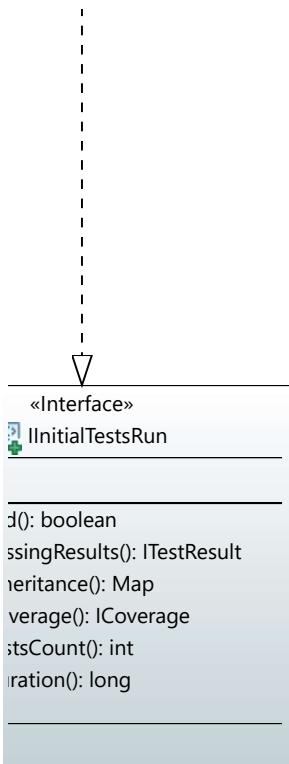
«Interface»

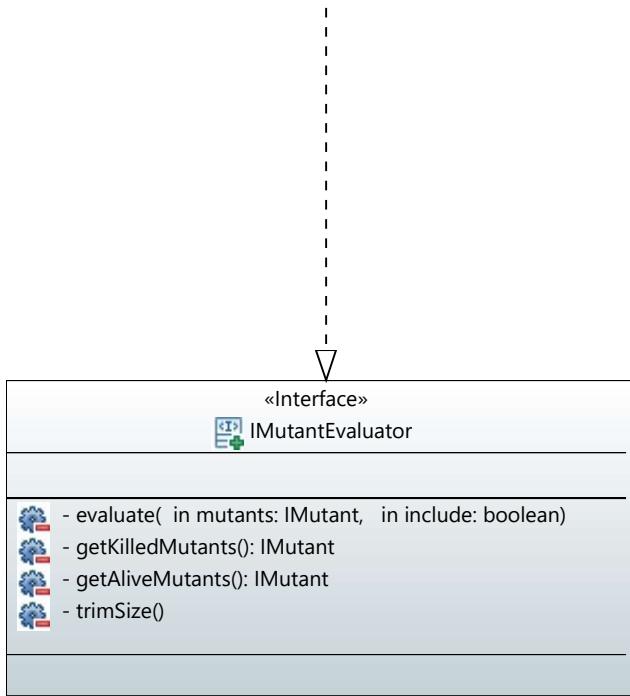
 ITestResult

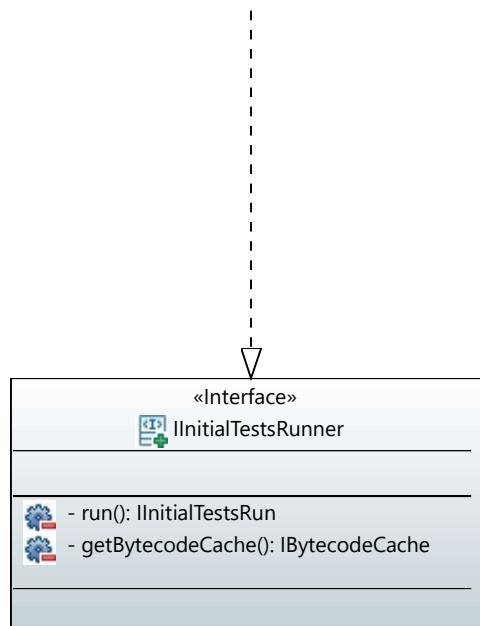
-  - getClassName(): String
-  - passed(): boolean
-  - getDuration(): long
-  - getThrownExceptions(): Throwable
-  - getTestMethods(): Set
-  - getFailingTestMethods(): Set
-  - getFailingByInfiniteLoopGuardTestMethods(): Set
-  - getSuccessfulTestMethods(): Set

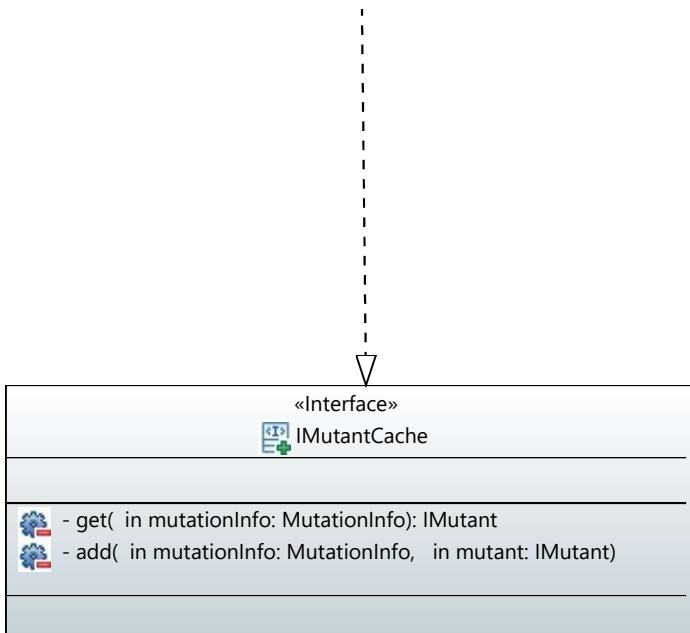


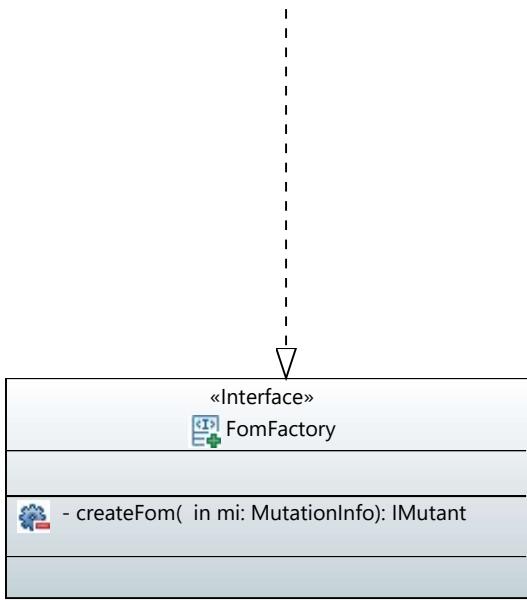
	- passed
	- getPa
	- getInh
	- getCo
	- getTes
	- getDu

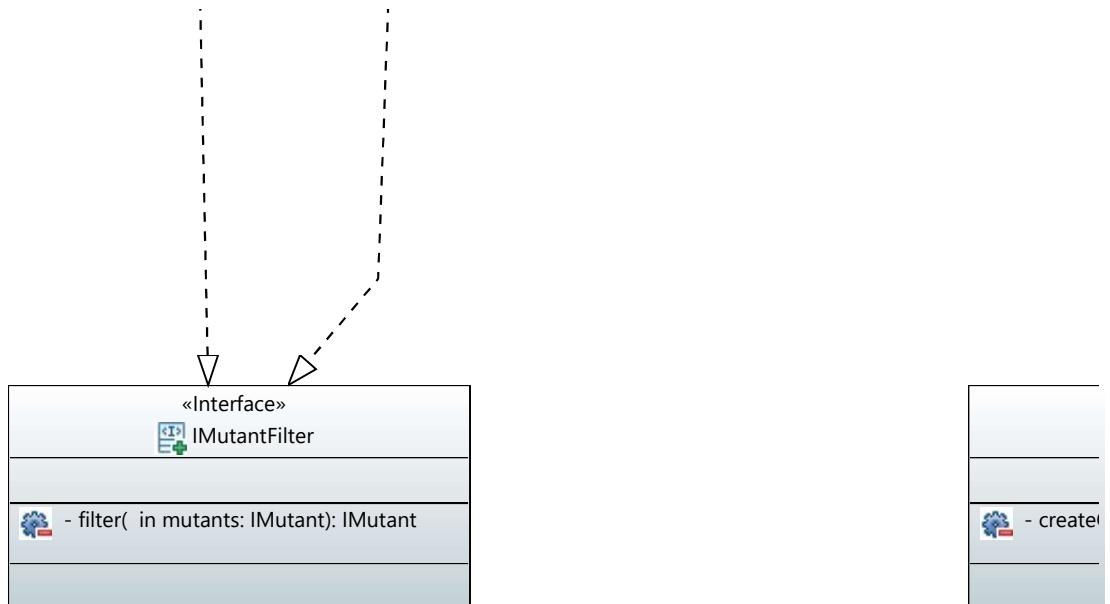


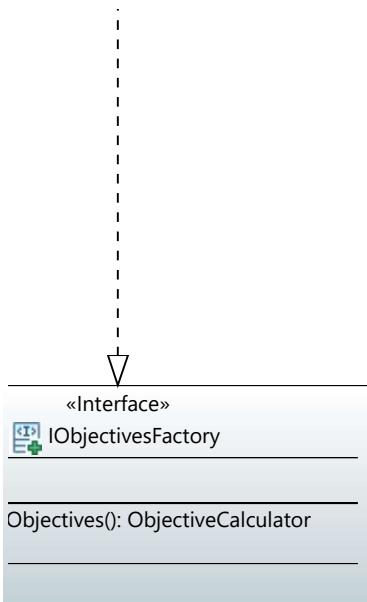










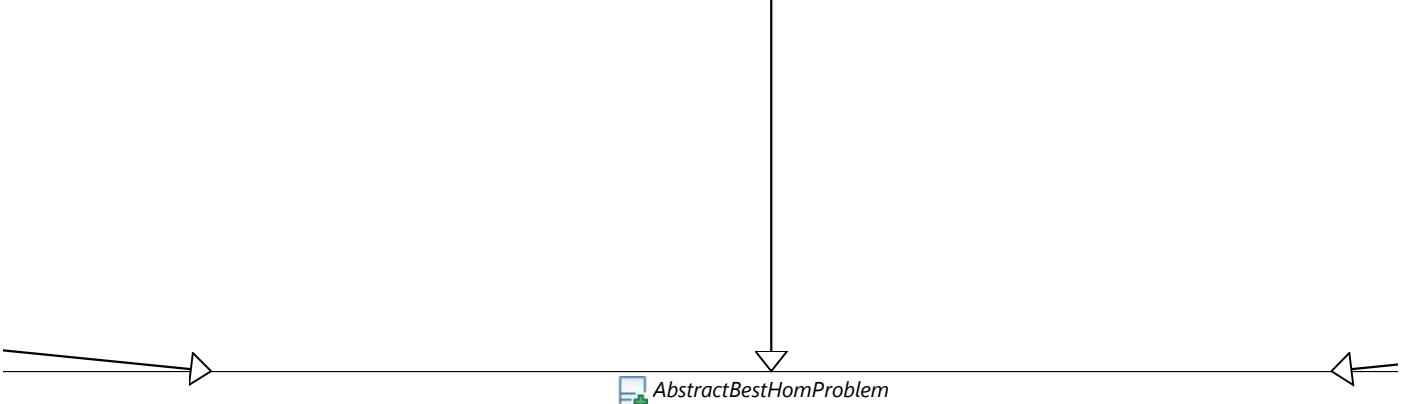




```
# DECISION_VARIABLES: int [1]
# MIN_CARDINALITY: int [1]
- operators: List [1]
- evaluator: IMutantEvaluator [1]
- calculators: List [1]
- homFactory: HomFactory [1]
- dataCollector: IHomDataCollector [1]
- maxMutationOrder: int [1]
# evaluatedHomsCache: Map [1]

«Create» + AbstractBestHomProblem()
# penalize( in solution: Solution)
# penalizeTowardsValidCardinality()
# calculateObjectives( in hom: IHom)
# setObjectivesFromCache( in k: int)
# cacheHomEvaluation( in bs: Evaluation)
+ getOperators(): List
+ getEvaluator(): IMutantEvaluator
+ getCalculators(): List
+ getHomFactory(): HomFactory
+ getDataCollector(): IHomDataCollector
+ getMaxMutationOrder(): int

AbstractBestHomProblem
penalize
penalizeTowardsValidCardinality
calculateObjectives
setObjectivesFromCache
cacheHomEvaluation
getOperators
getEvaluator
getCalculators
getHomFactory
getDataCollector
getMaxMutationOrder
```



```
graph TD; A[AbstractBestHomProblem] --> B[AbstractHomProblem]
```

AbstractBestHomProblem

]

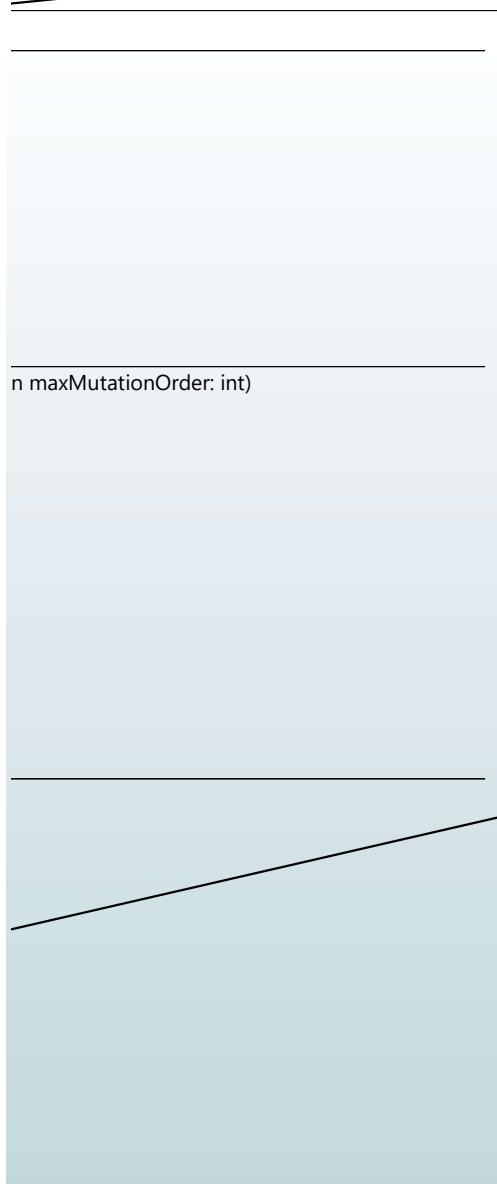
ctor [1]

]

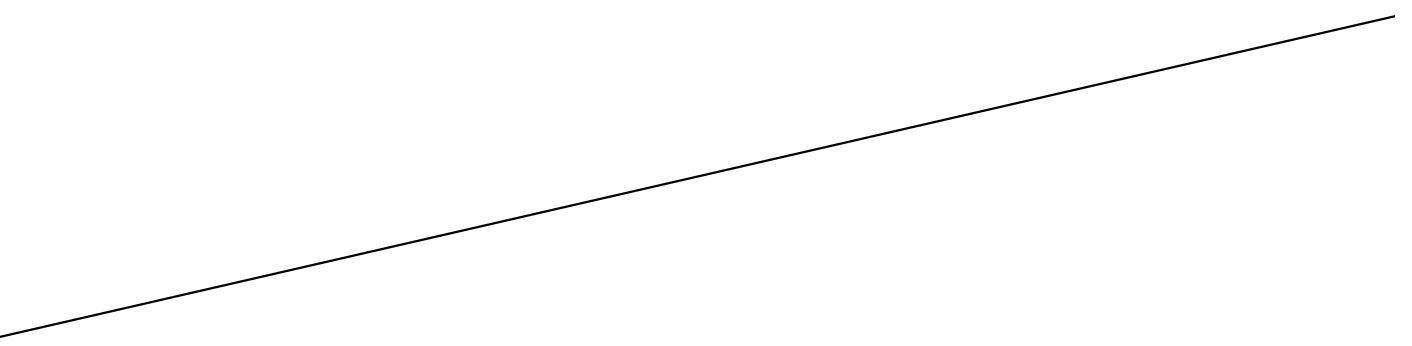
problem(in operators: List, in evaluator: IMutantEvaluator, in calculators: List, in homFactory: HomFactory, in dataCollector: IHomDataCollector, i
y(in solution: Solution, in cardinality: int)
IMutant, in usedForms: List, in solution: Solution, in order: int): List
os: BitSet, in solution: Solution)
BitSet, in objectiveValues: List)

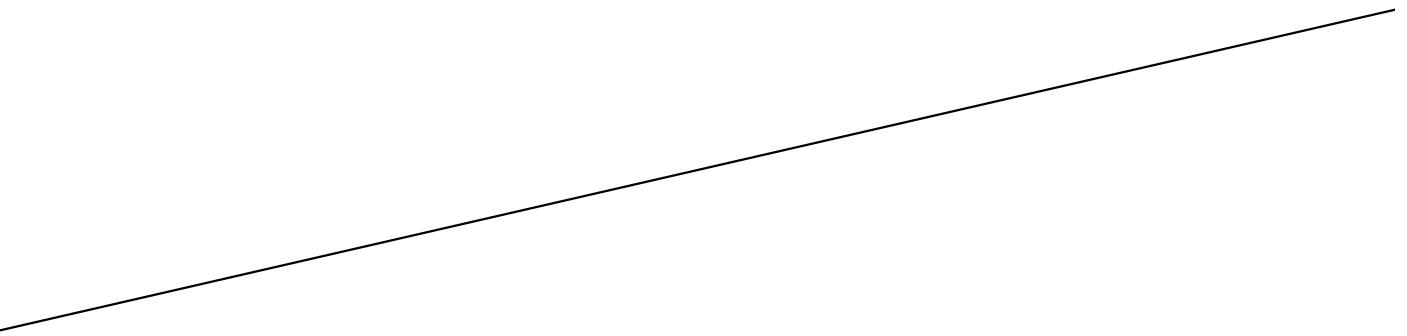
tor

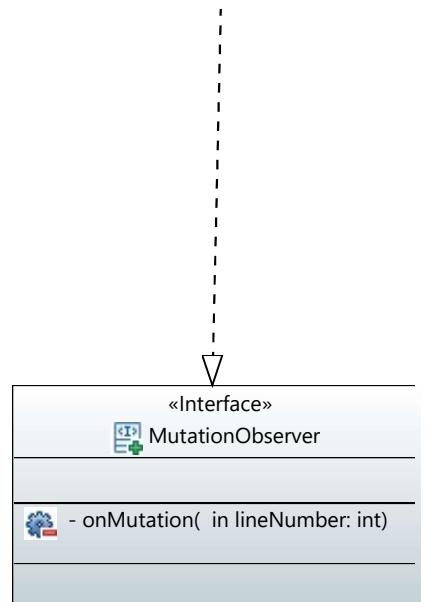
y
Collector

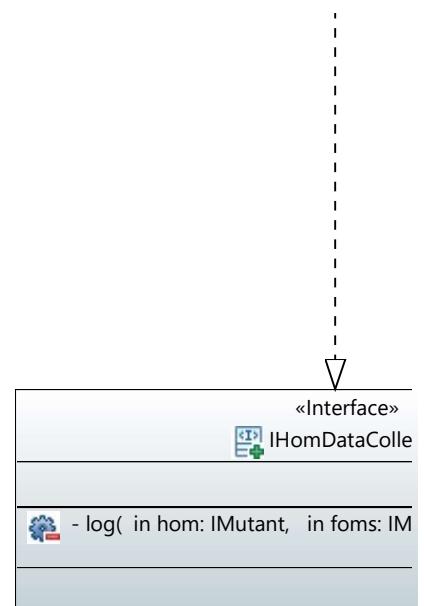


n maxMutationOrder: int)

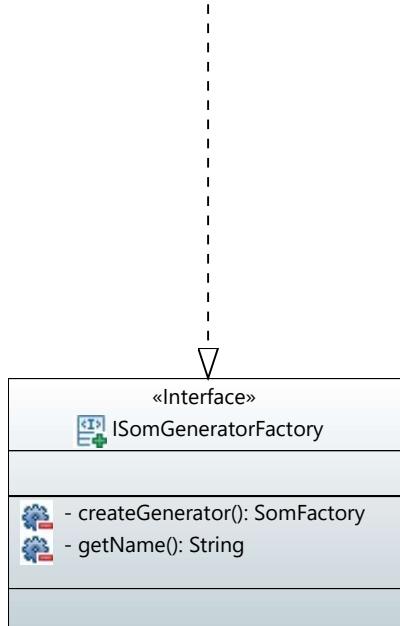


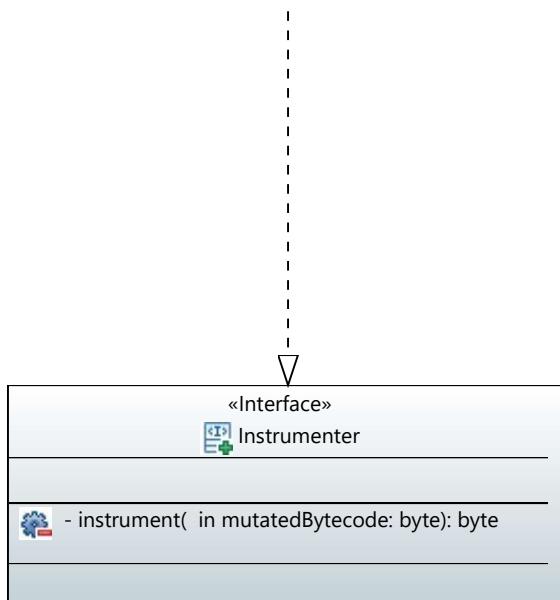


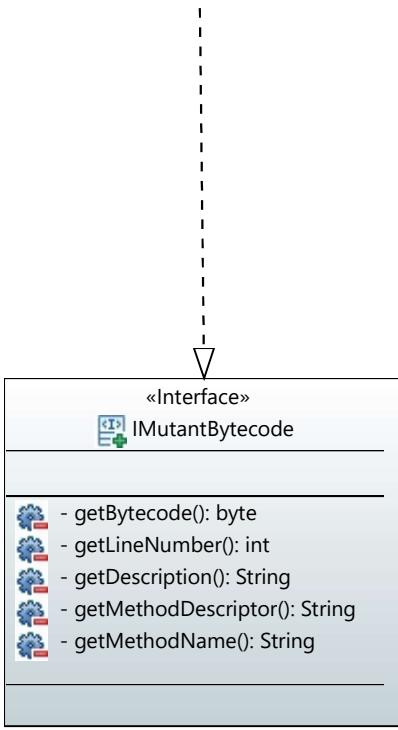


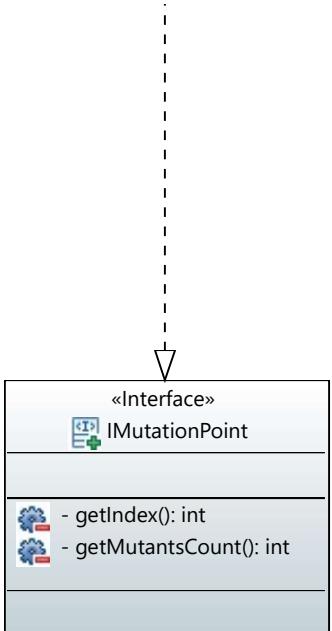


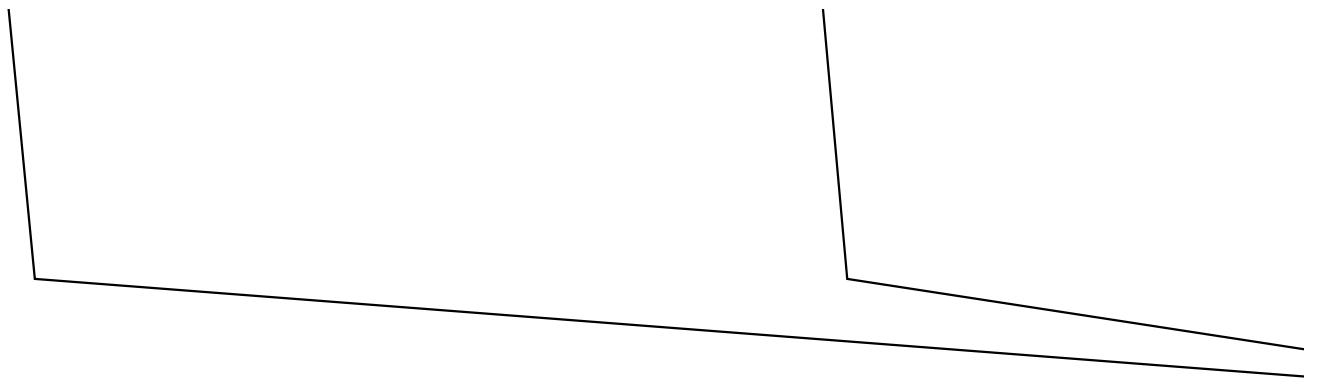
```
ctor  
_____  
utant, in s: Solution)  
_____
```

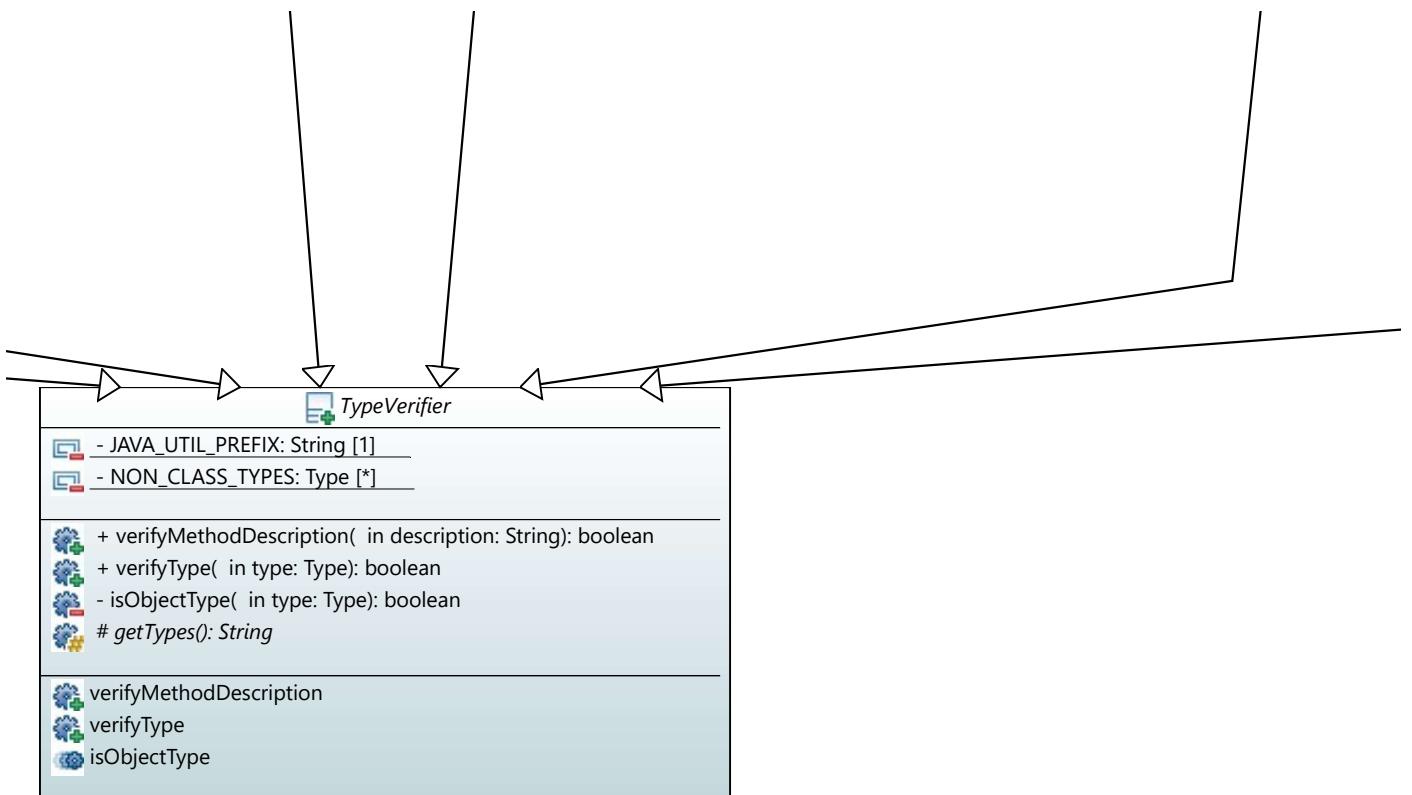


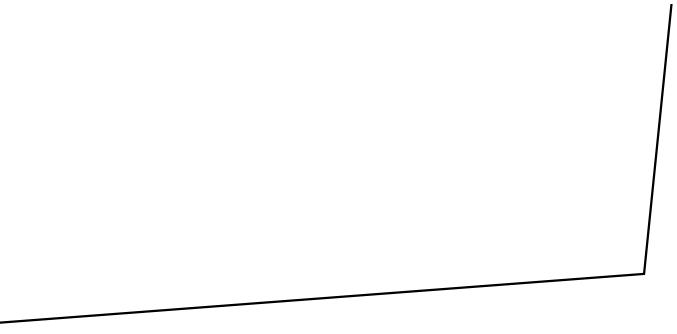


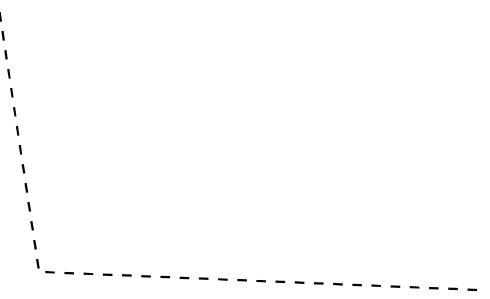




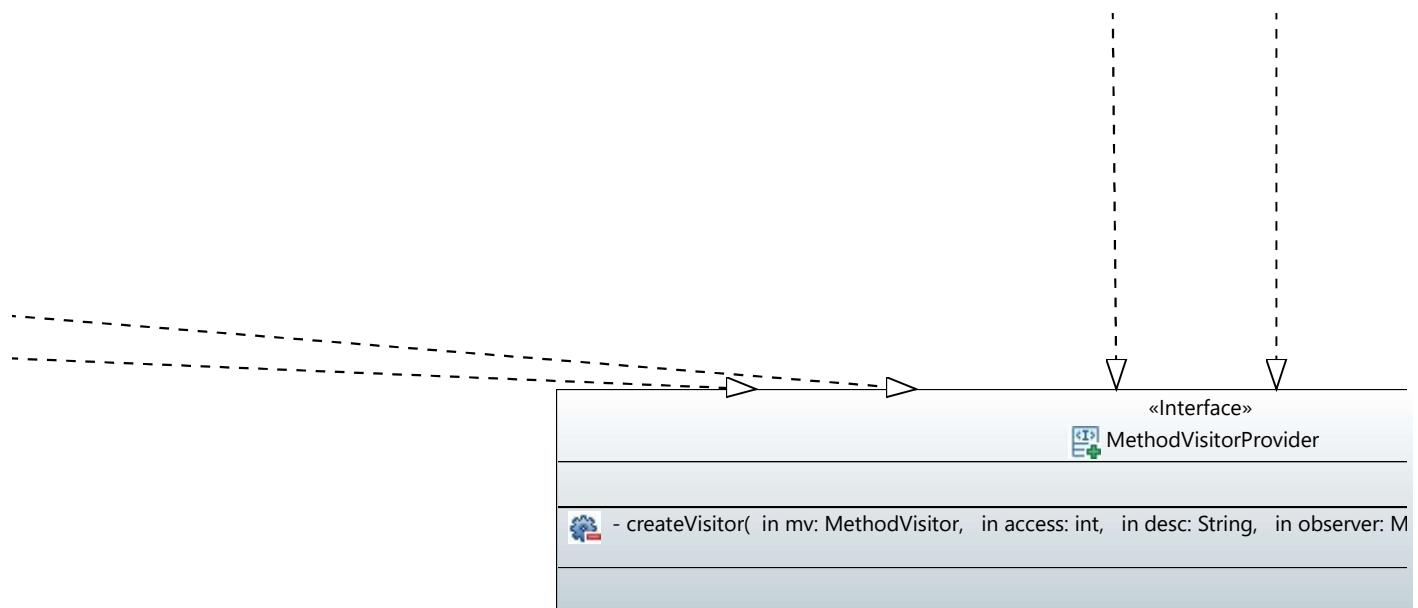


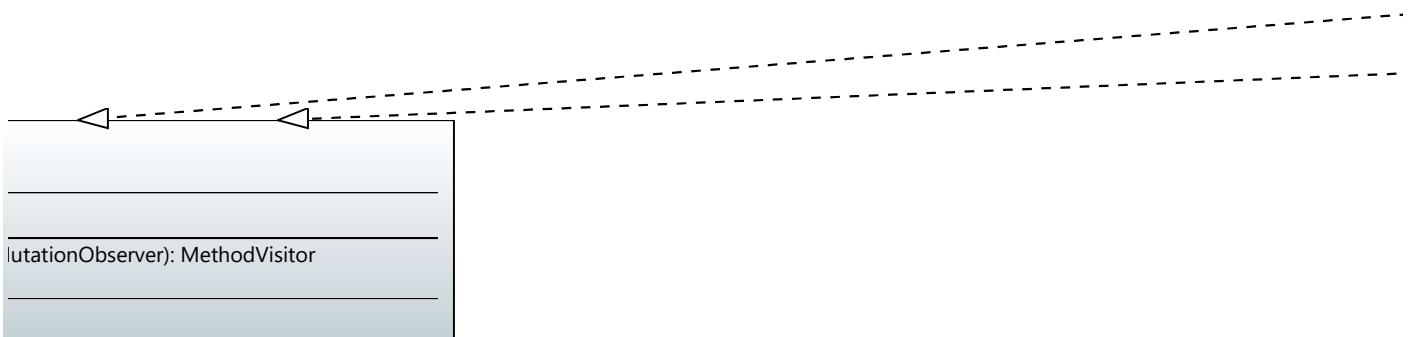


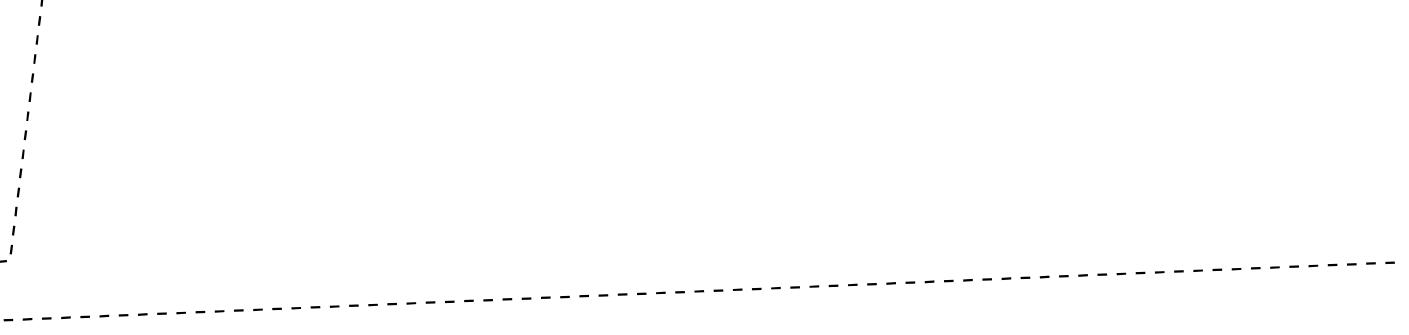


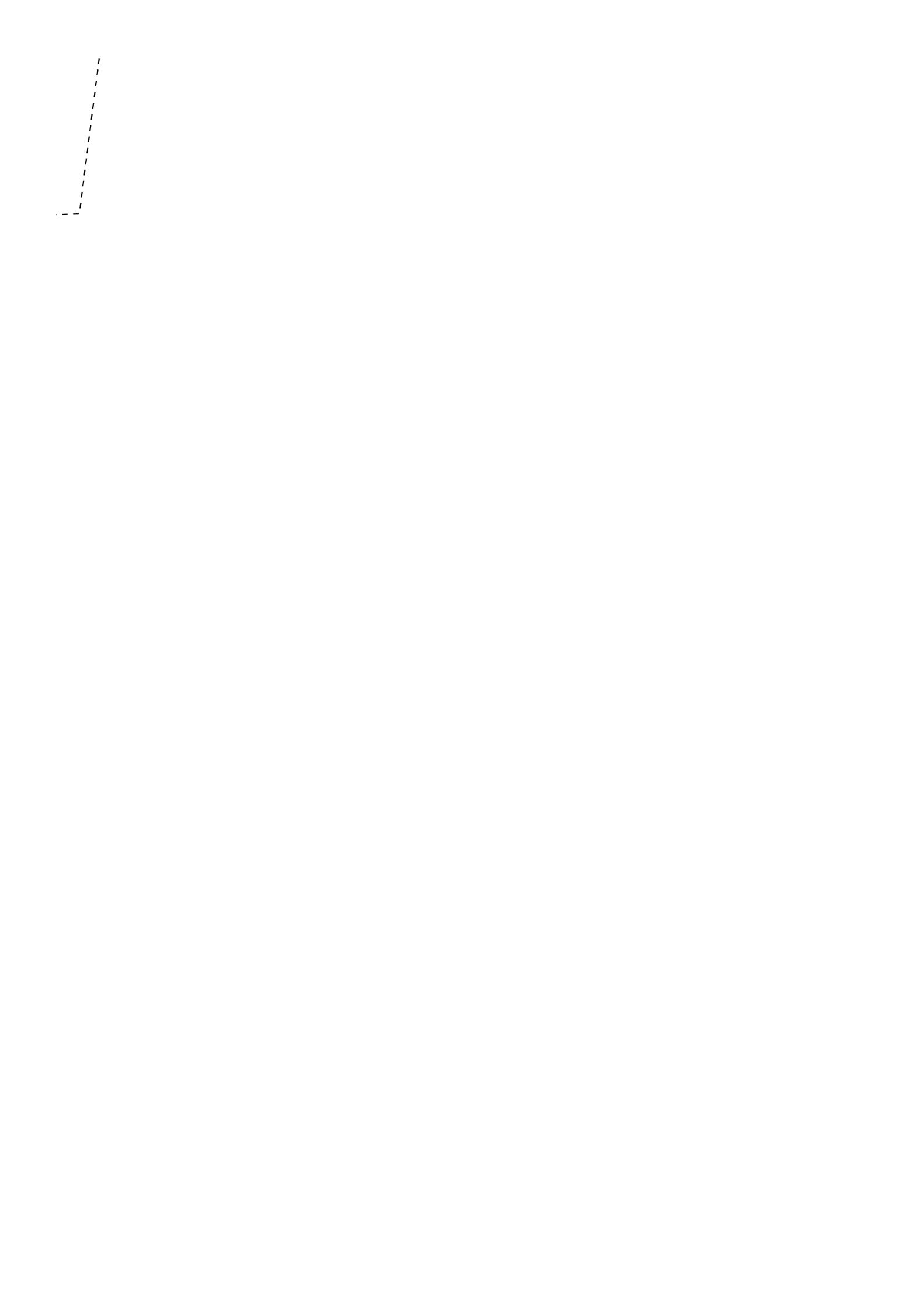


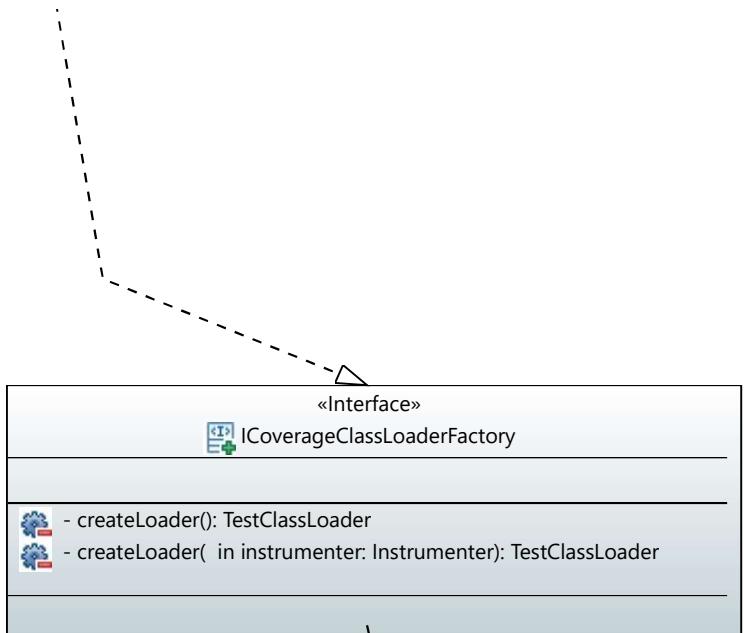


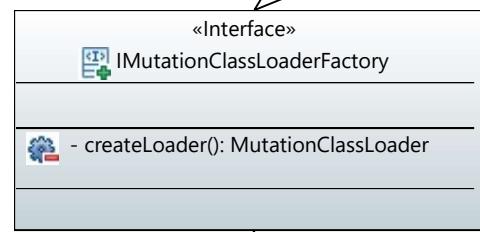


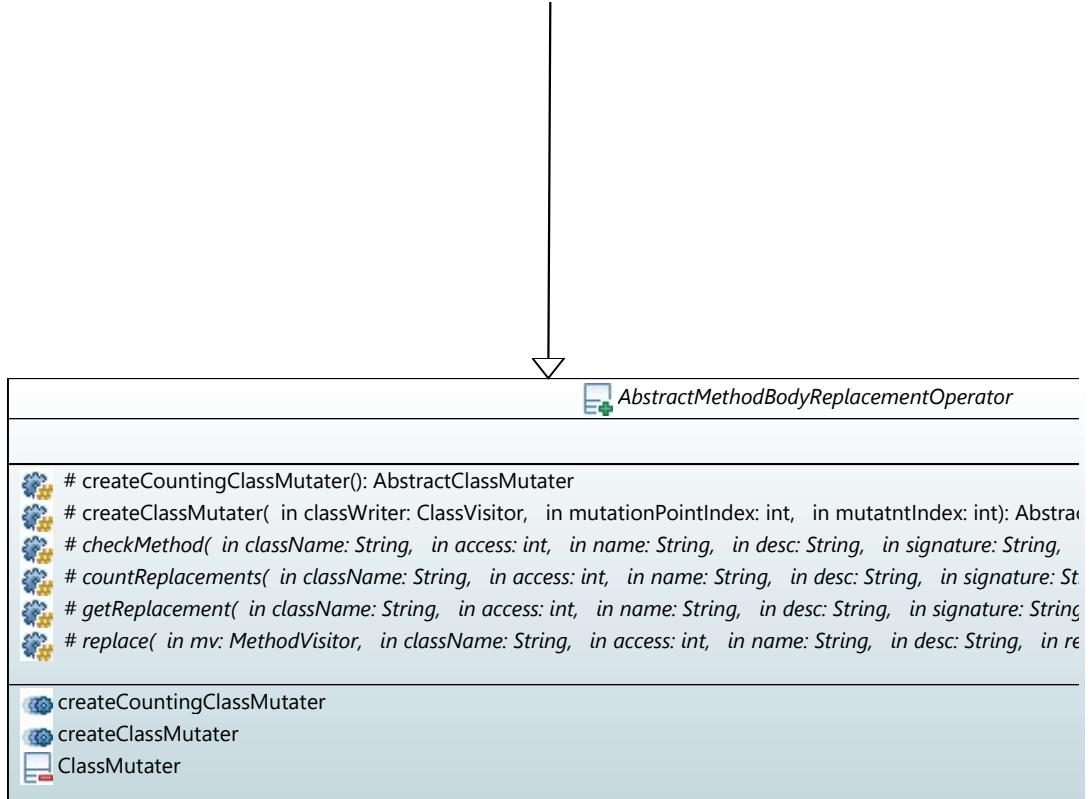


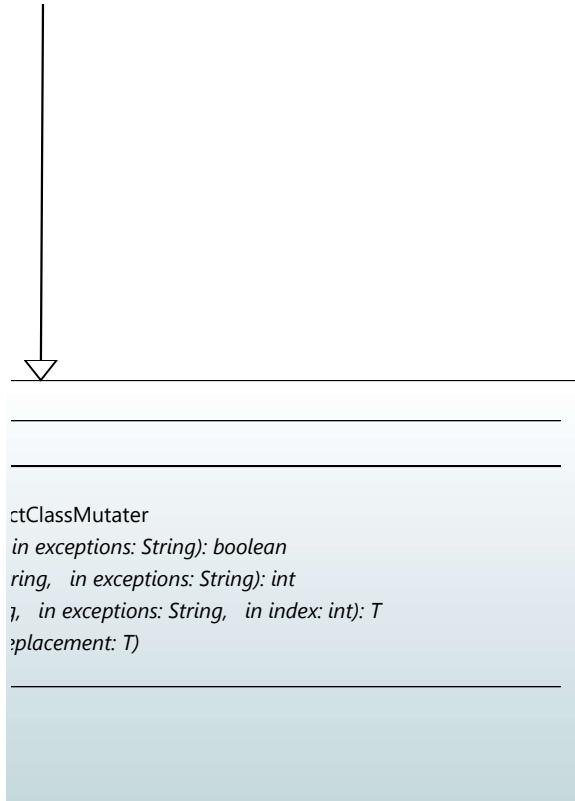


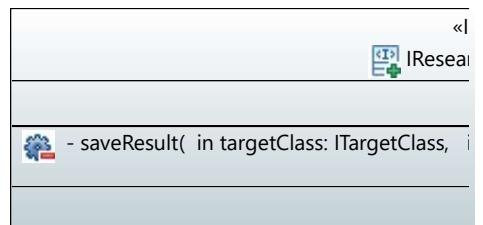


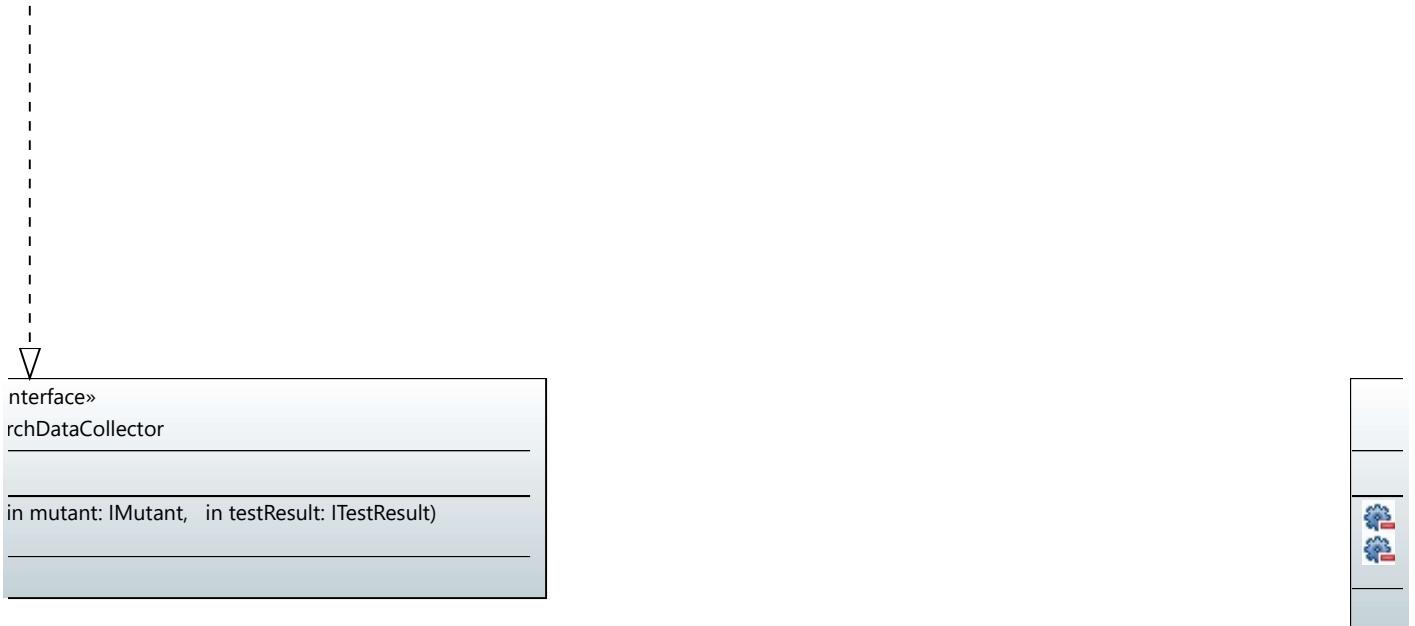


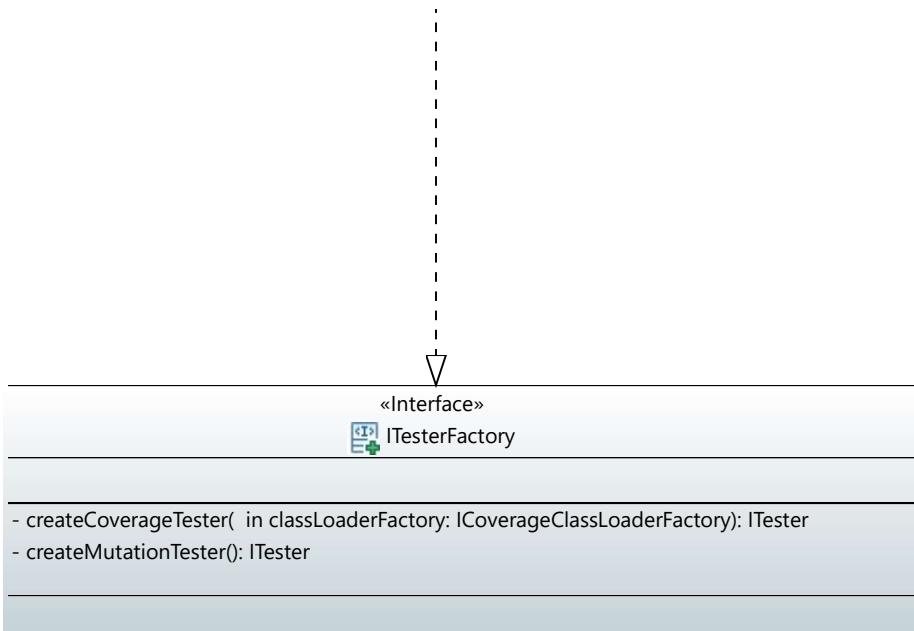


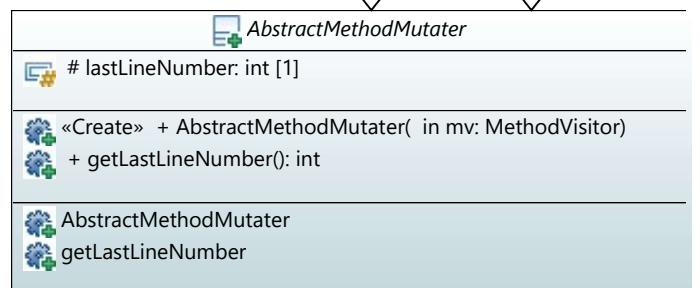




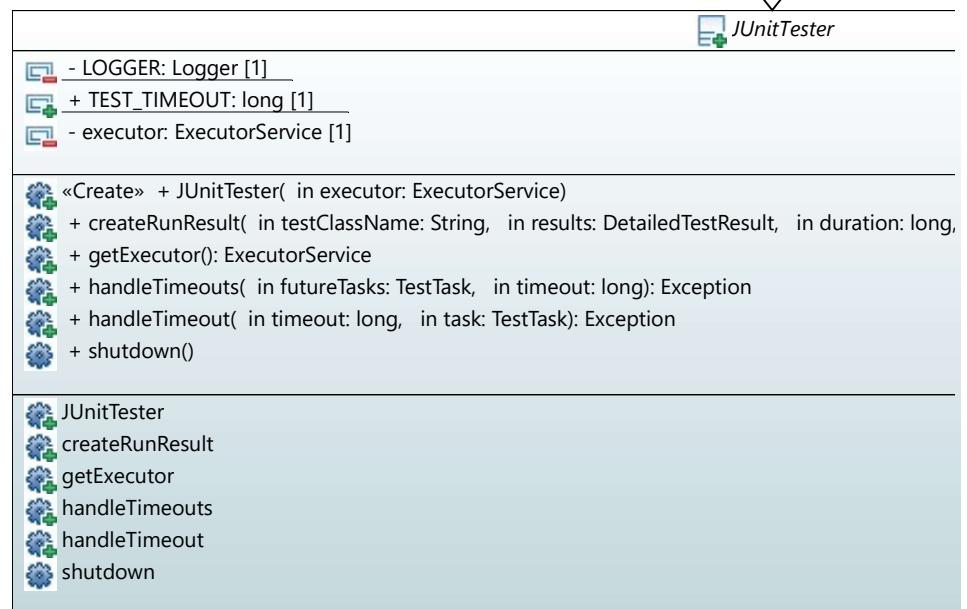


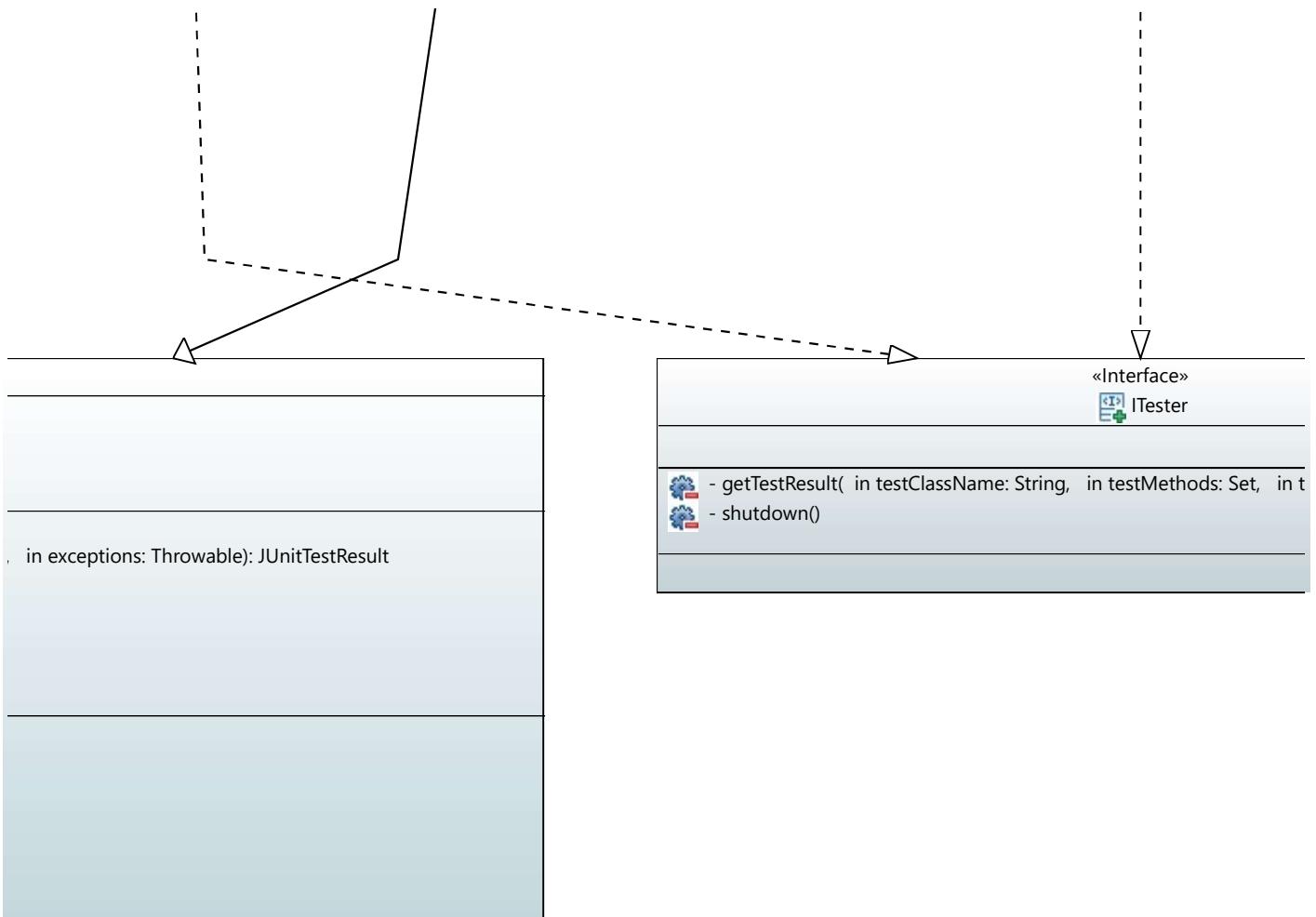




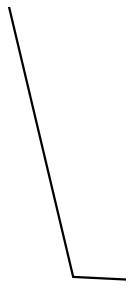


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]

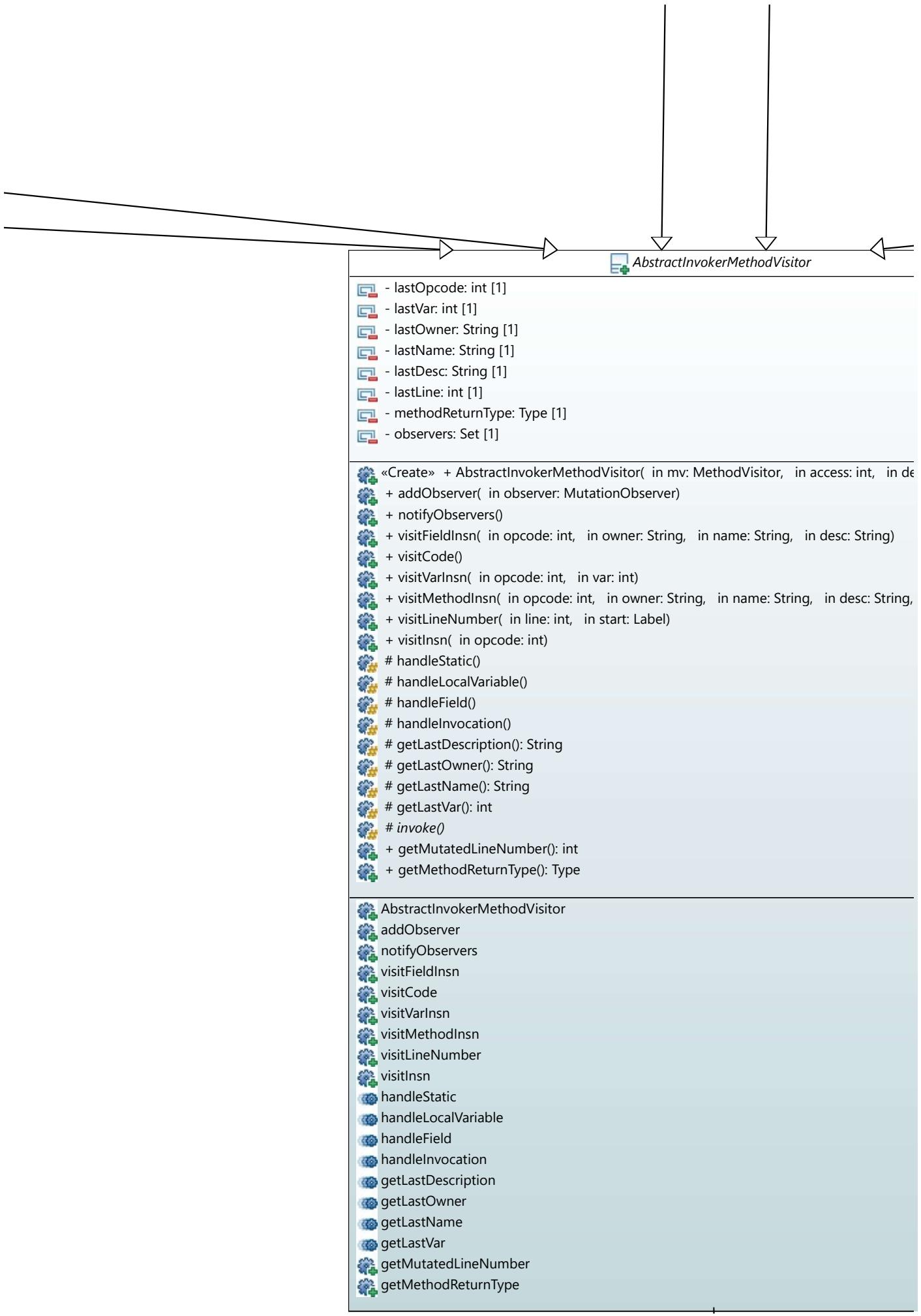


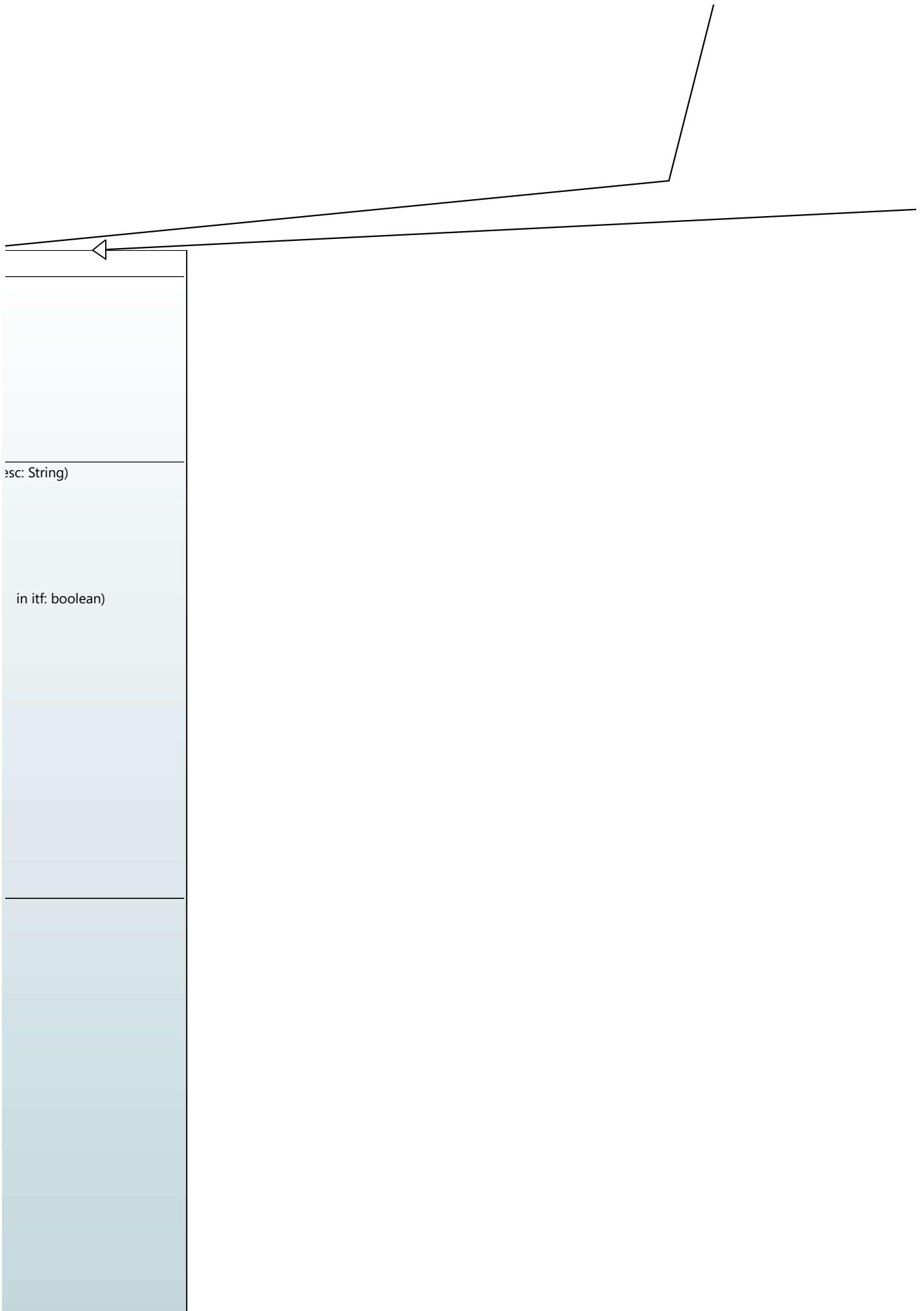


```
imeout: long): ITestResult
```

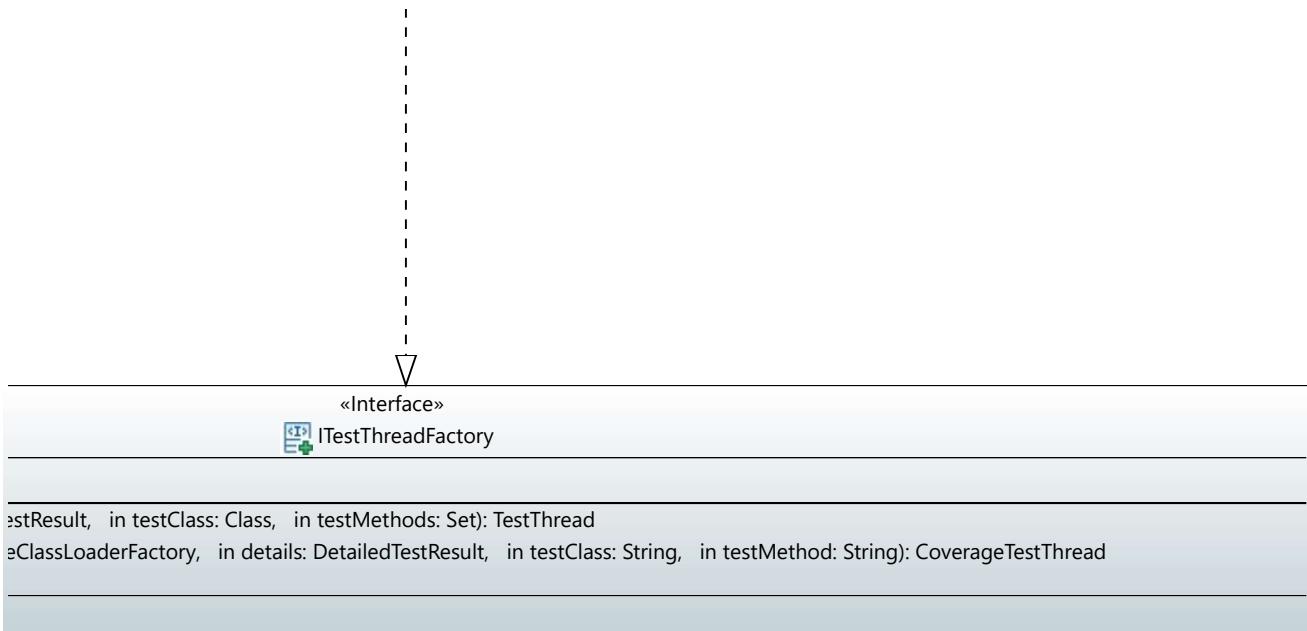


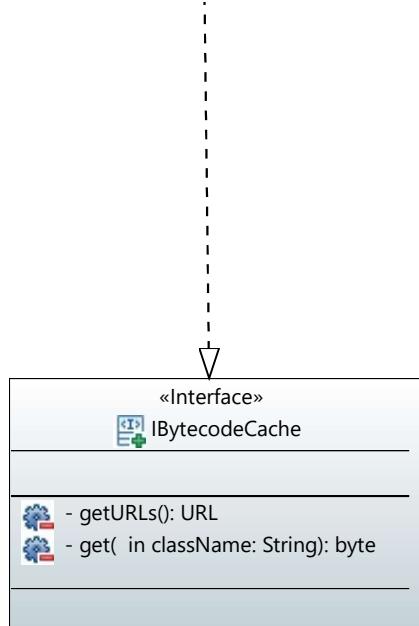


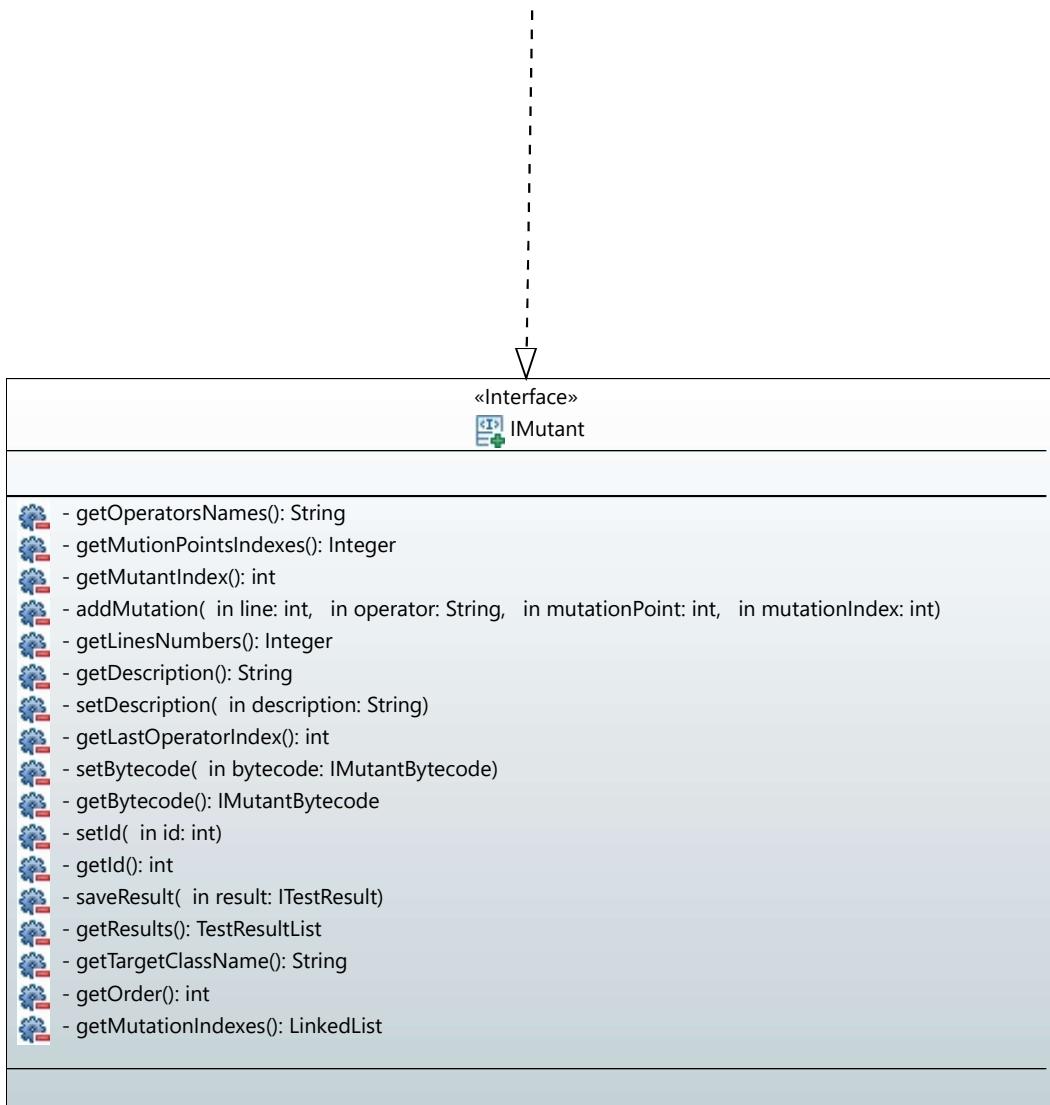




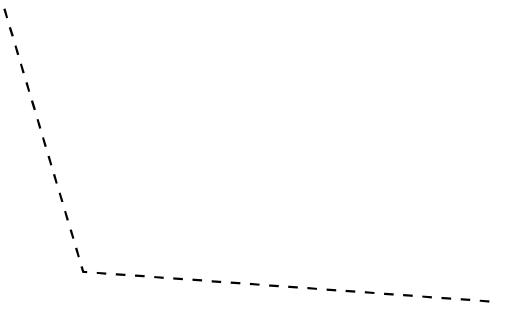
 - createMutationTestThread(in details: DetailedTe  - createCoverageTestThread(in factory: ICoverage

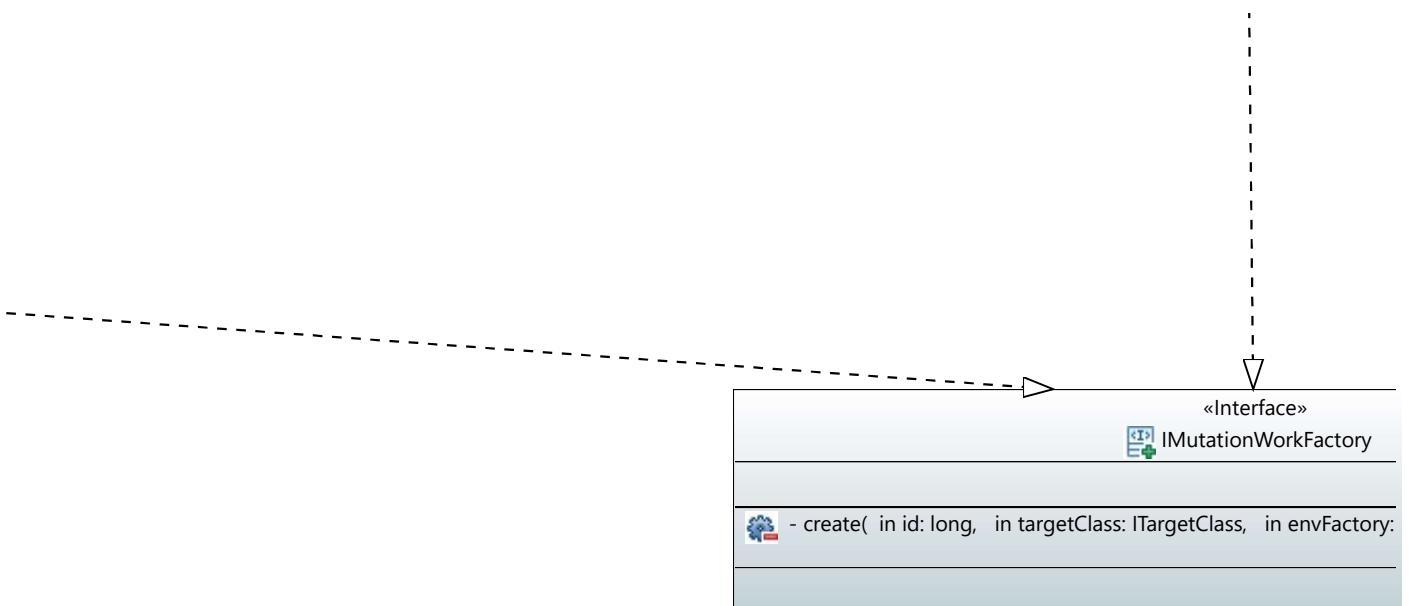


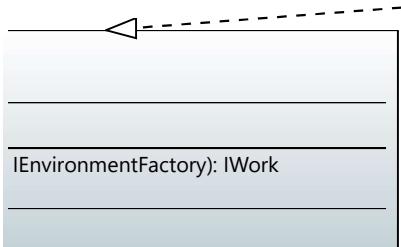


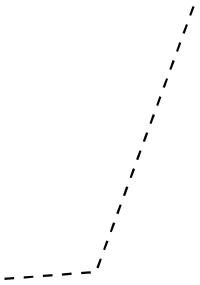




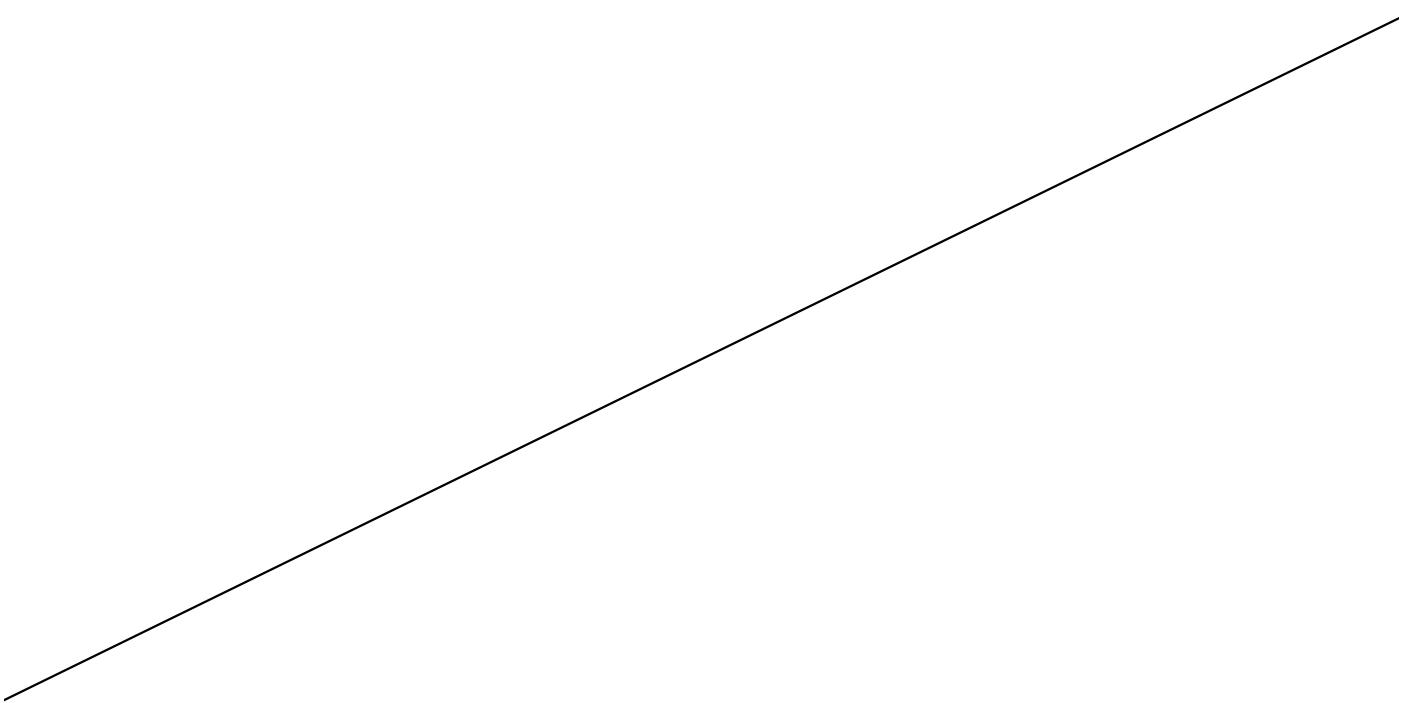


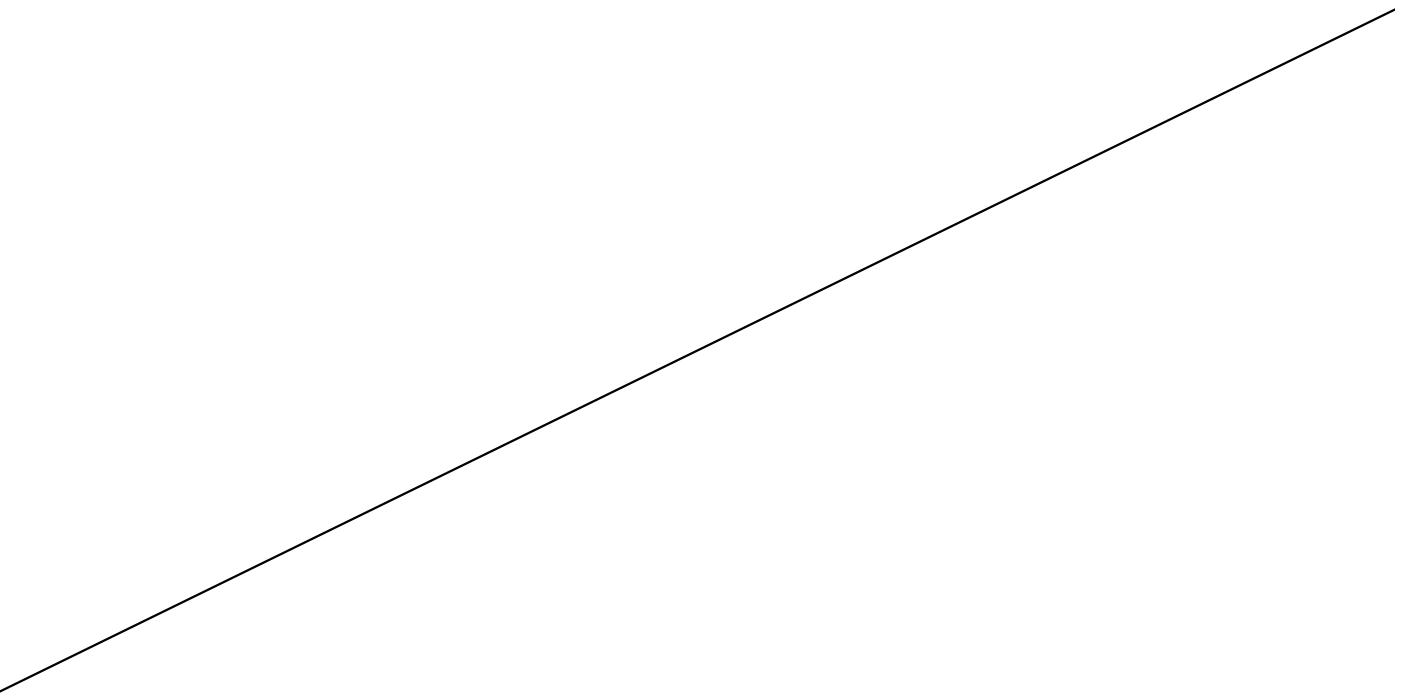


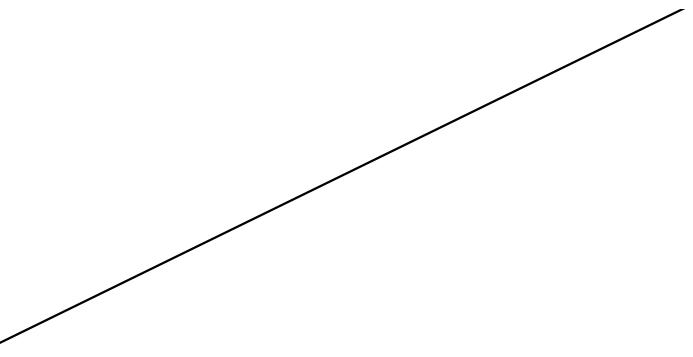




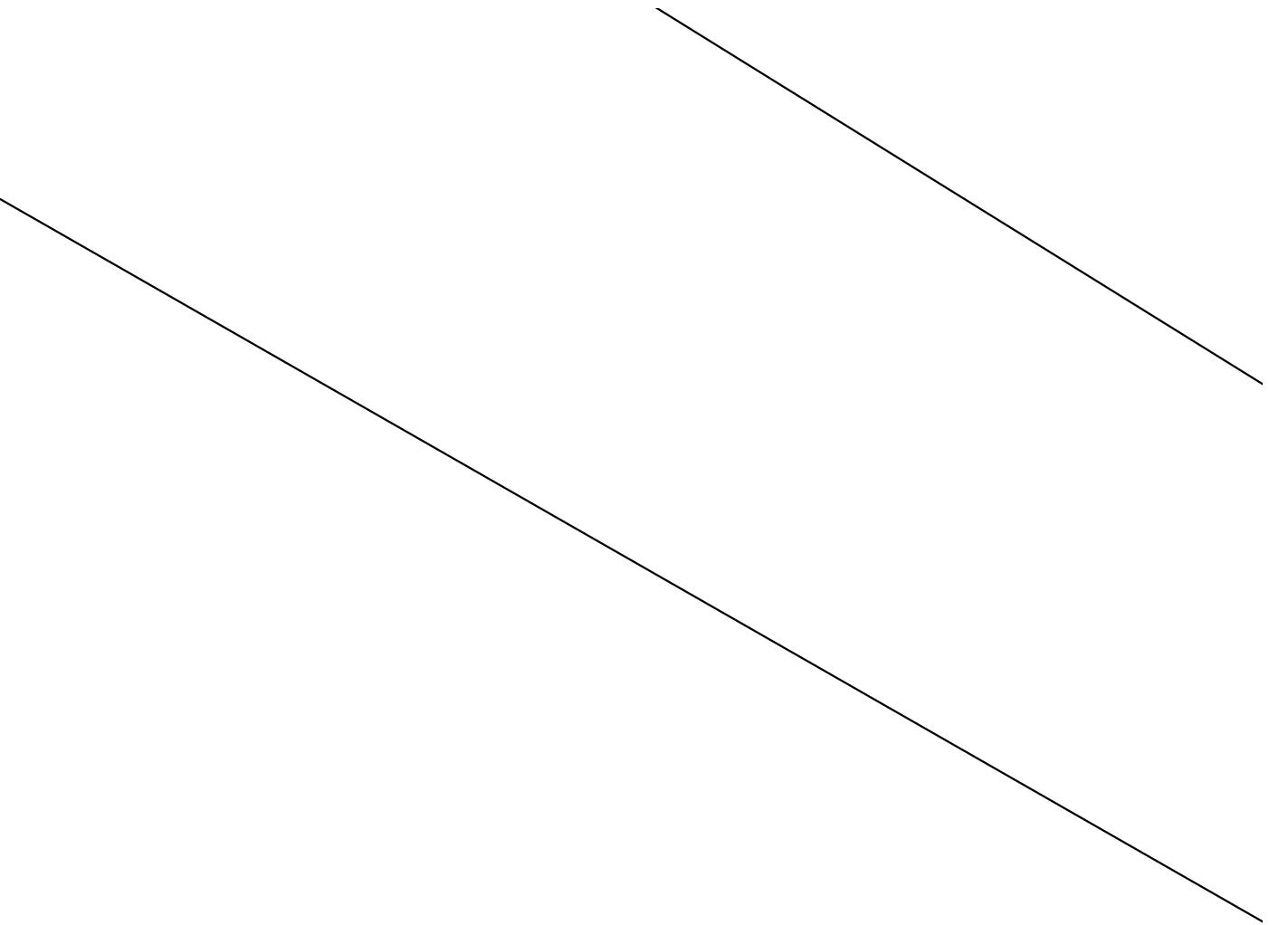


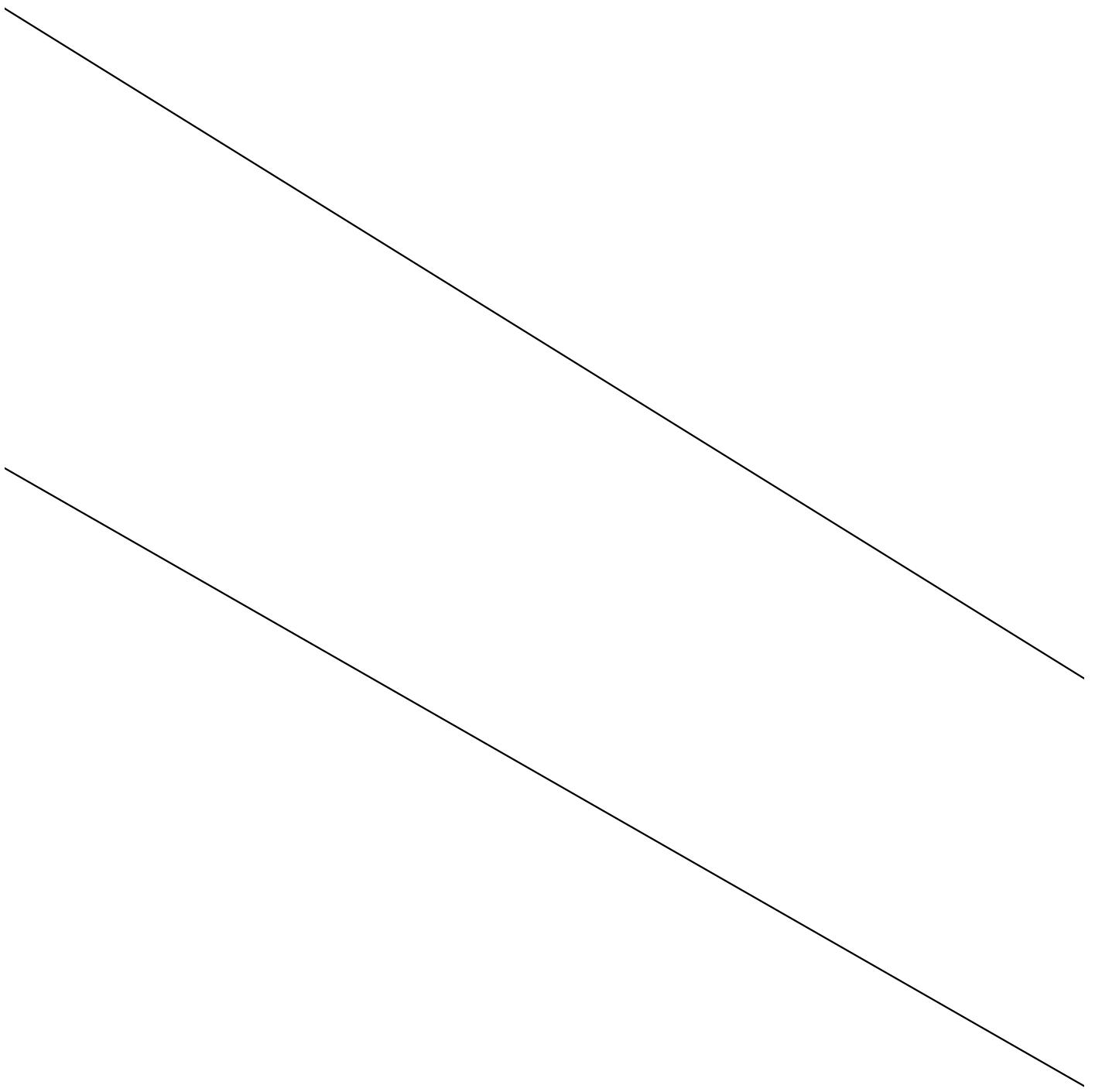






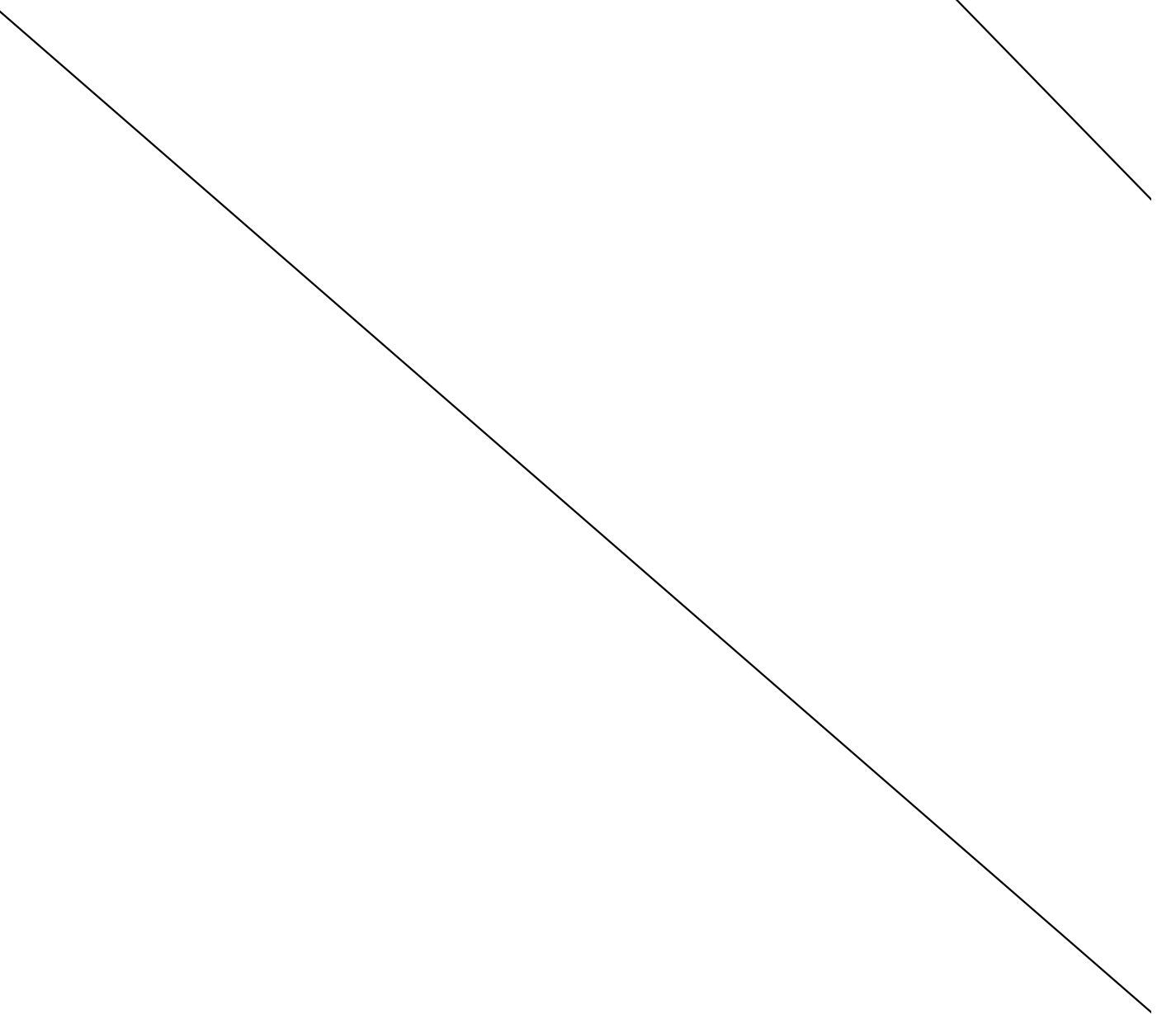
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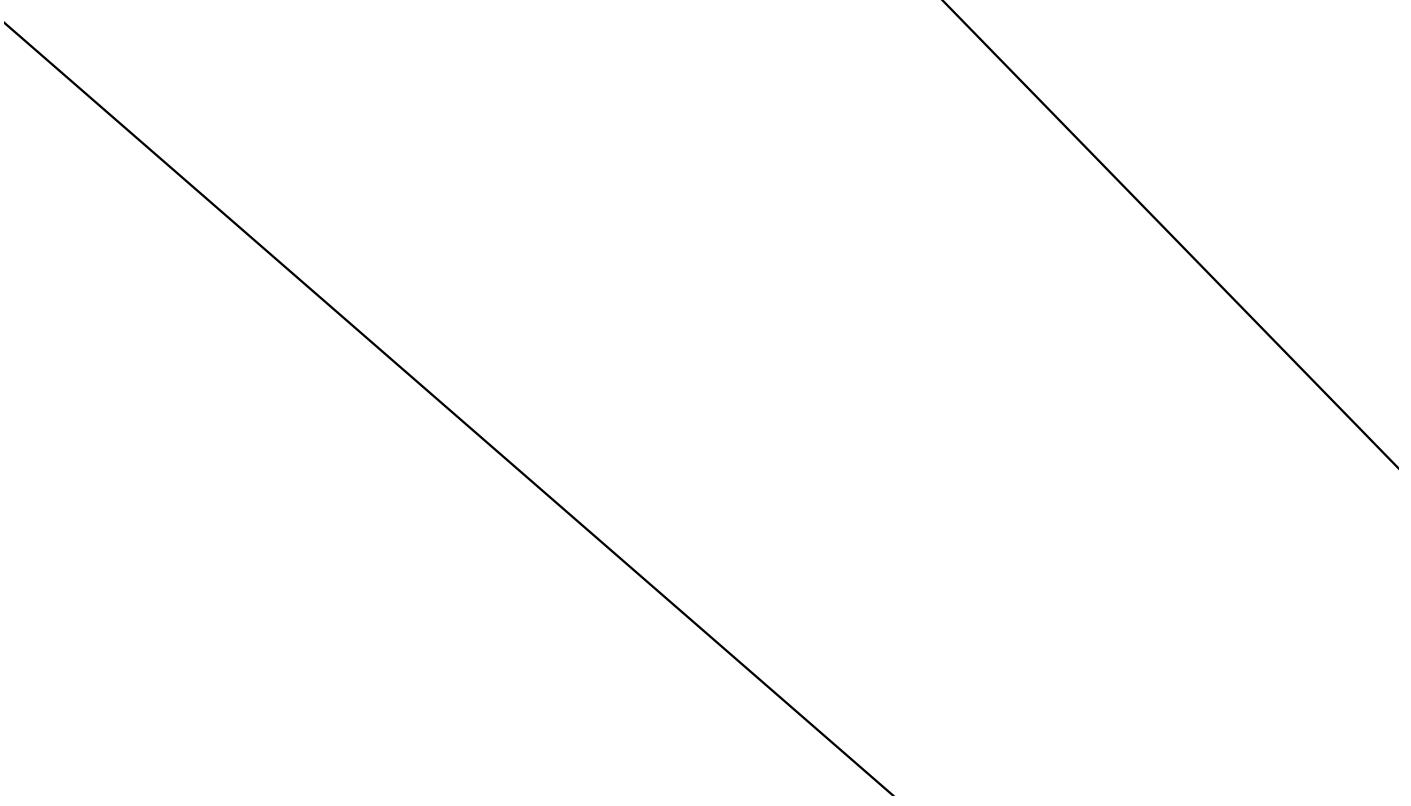
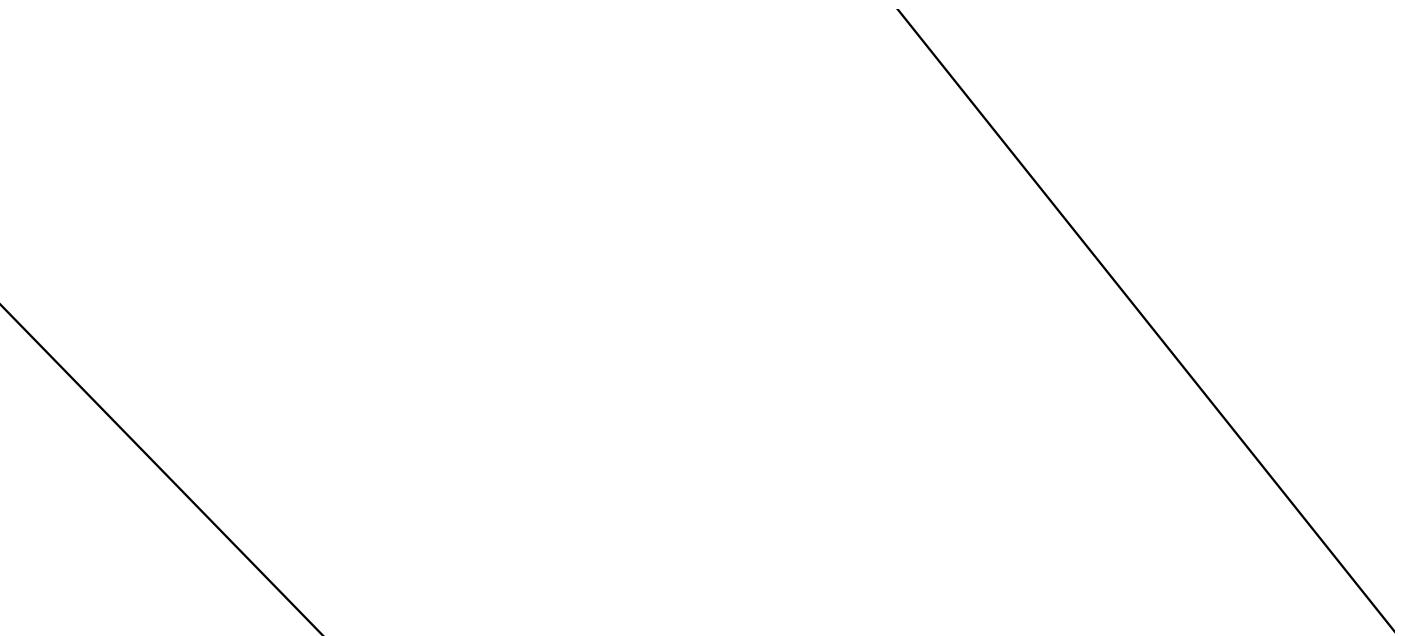


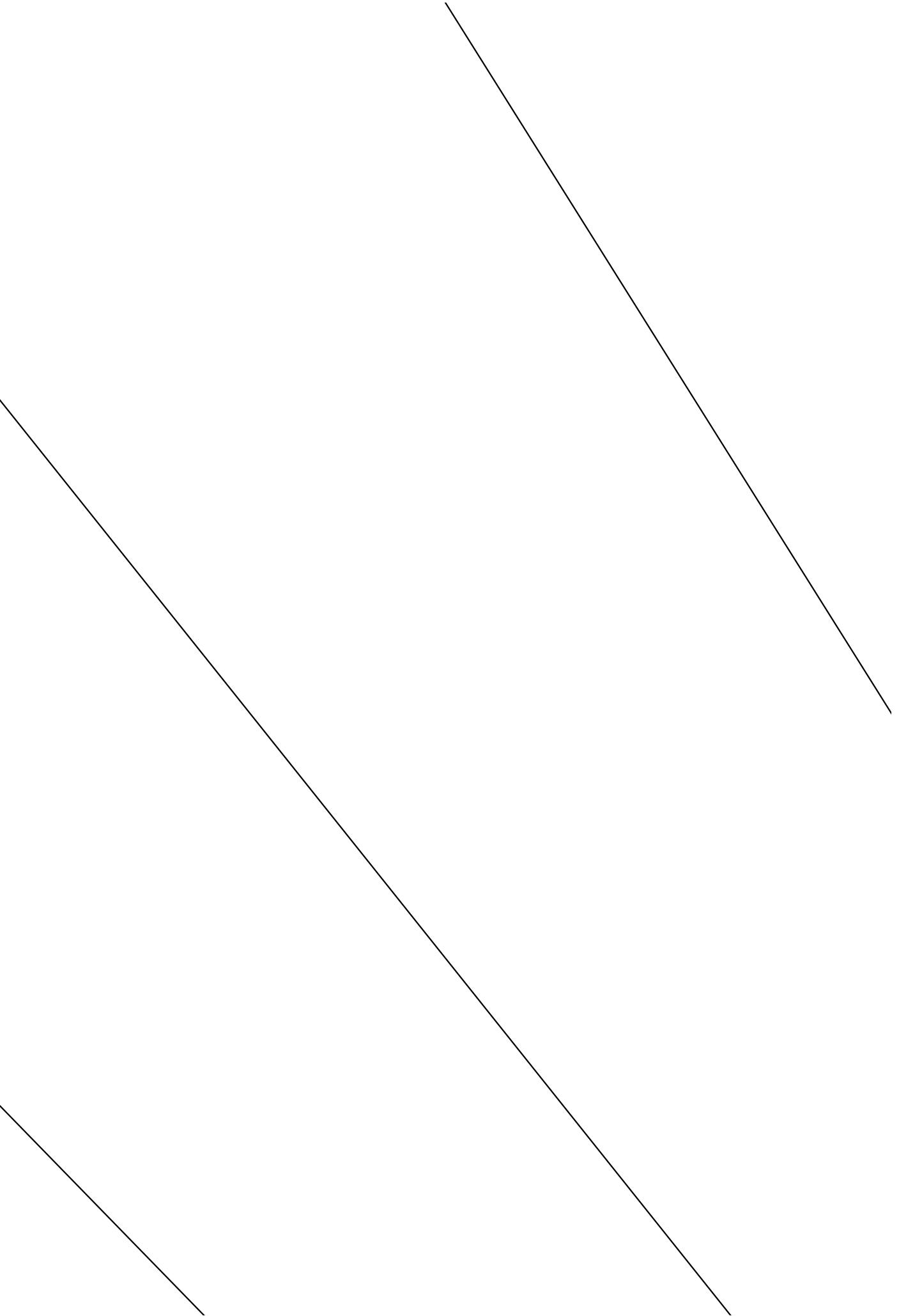


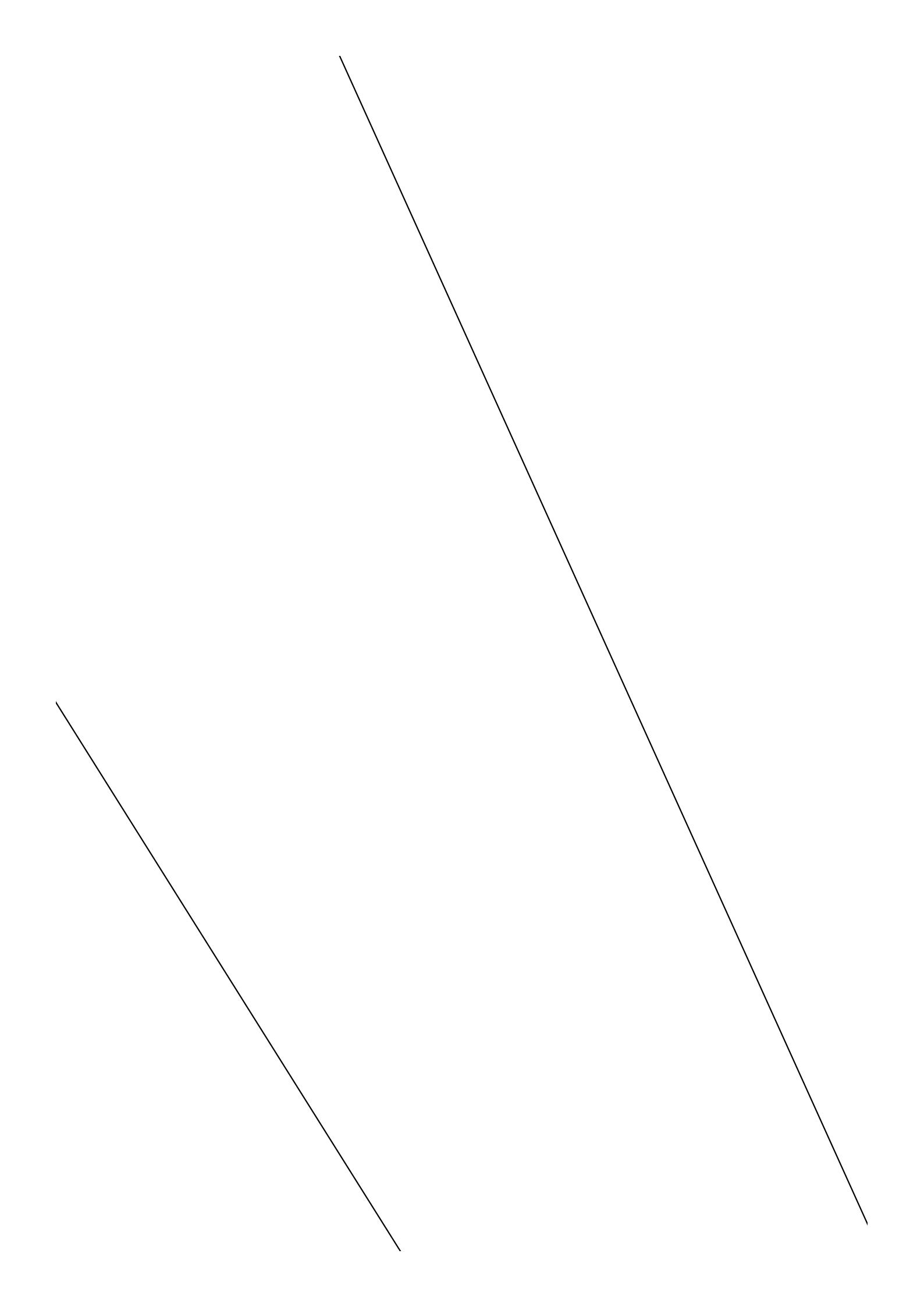
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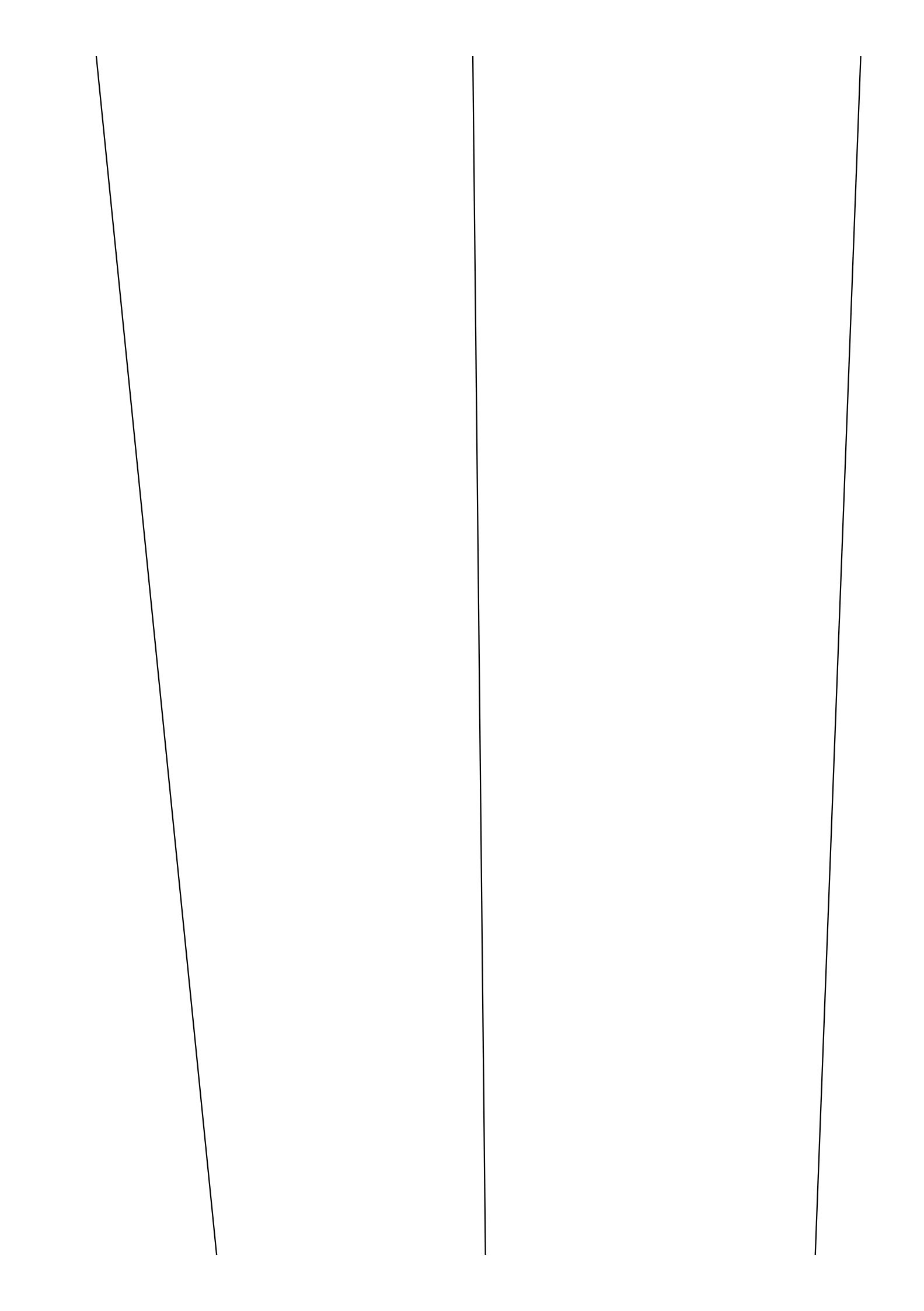
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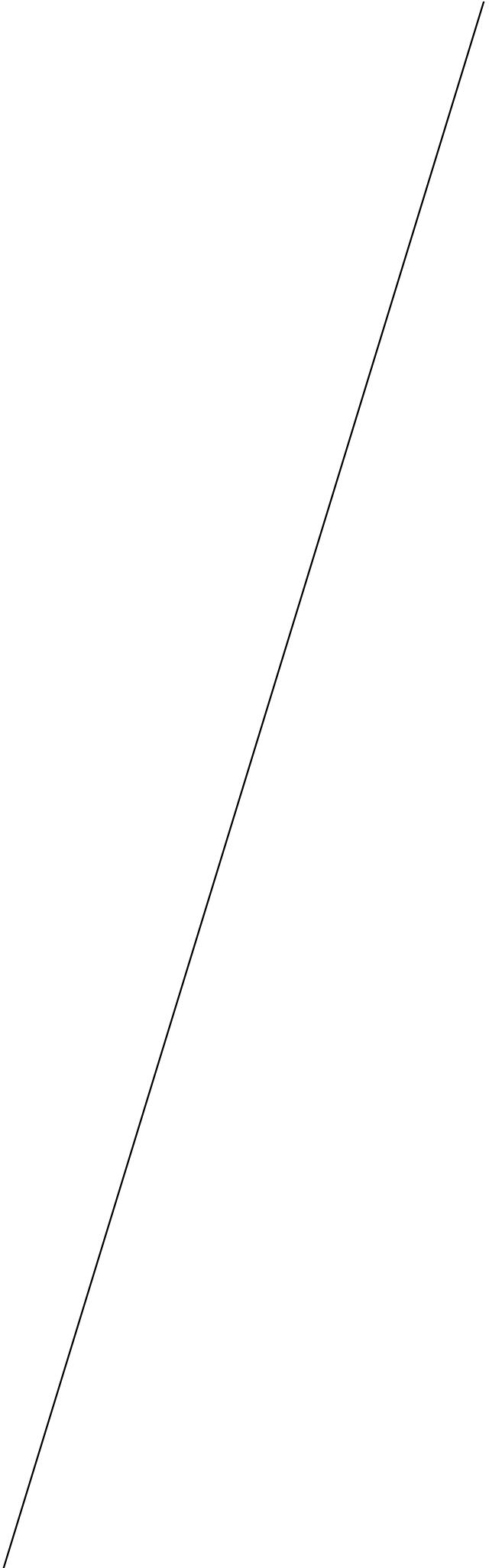






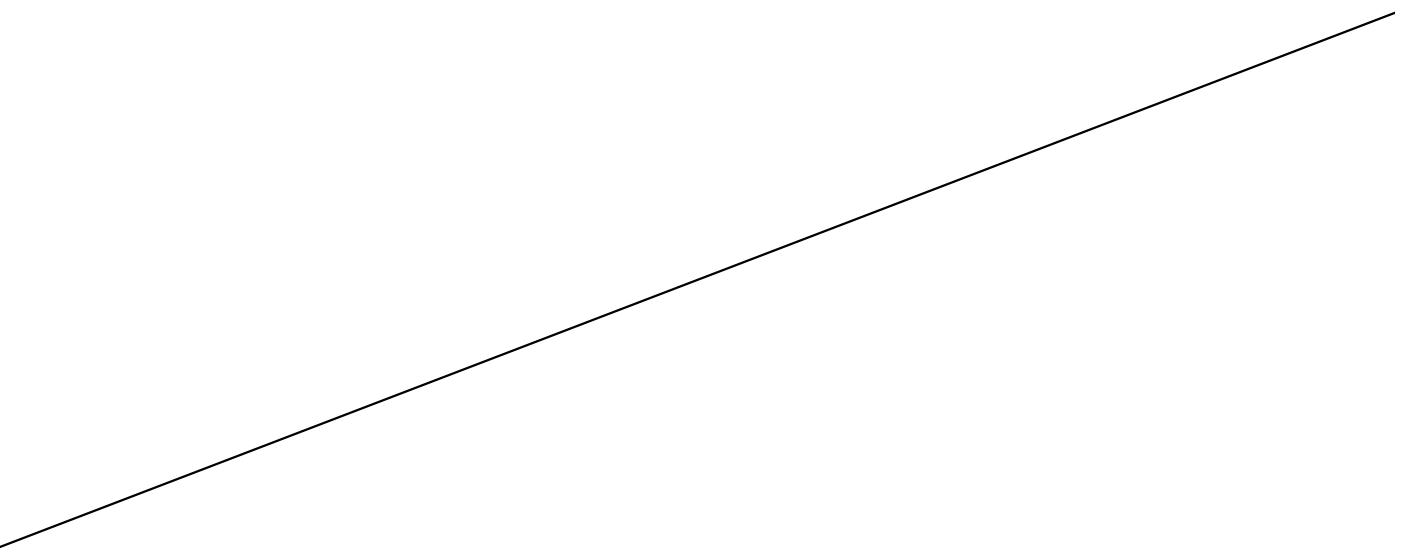


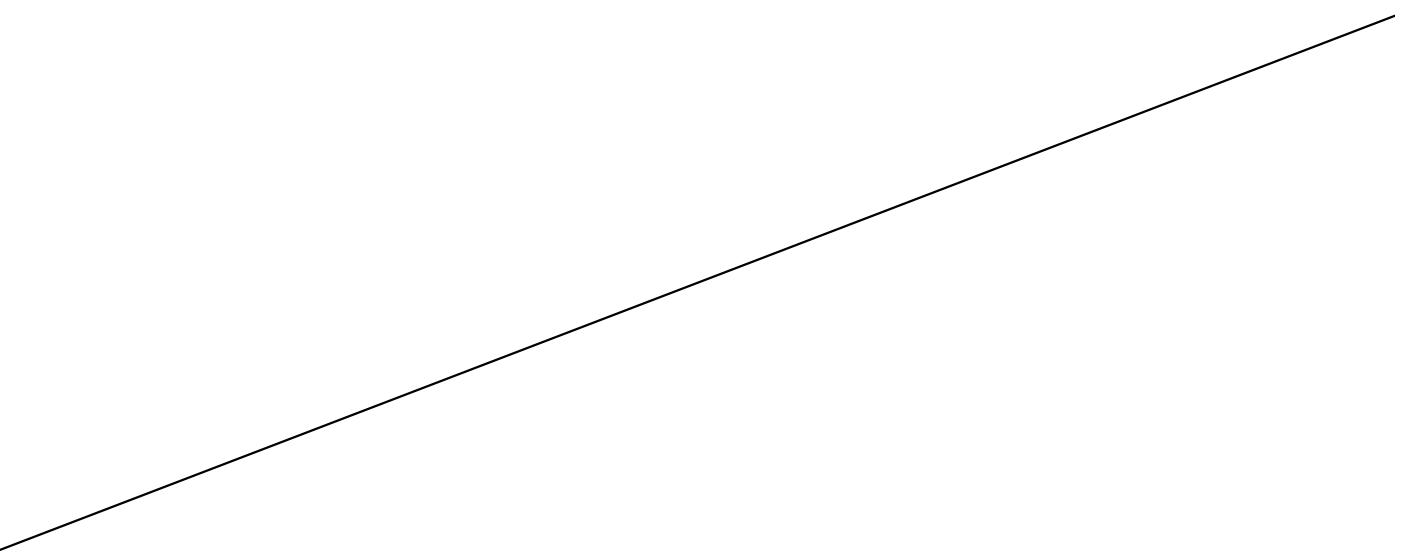


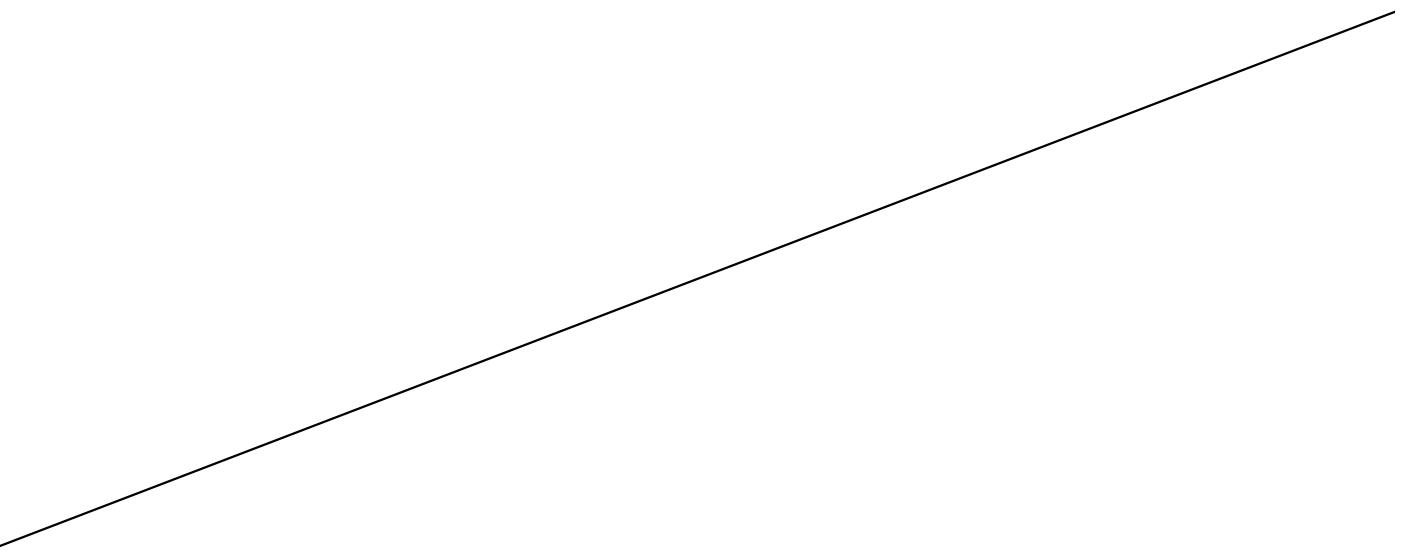


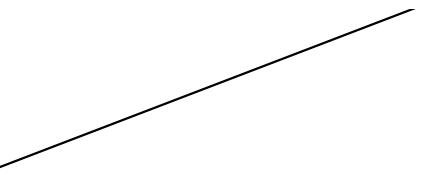
AbstractQueueWorker implements IQueueWorker

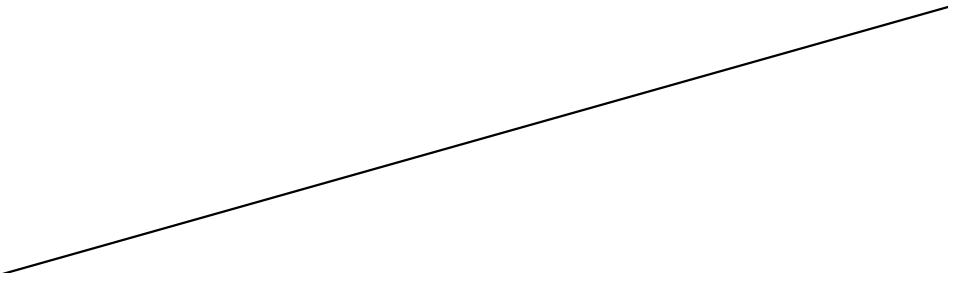


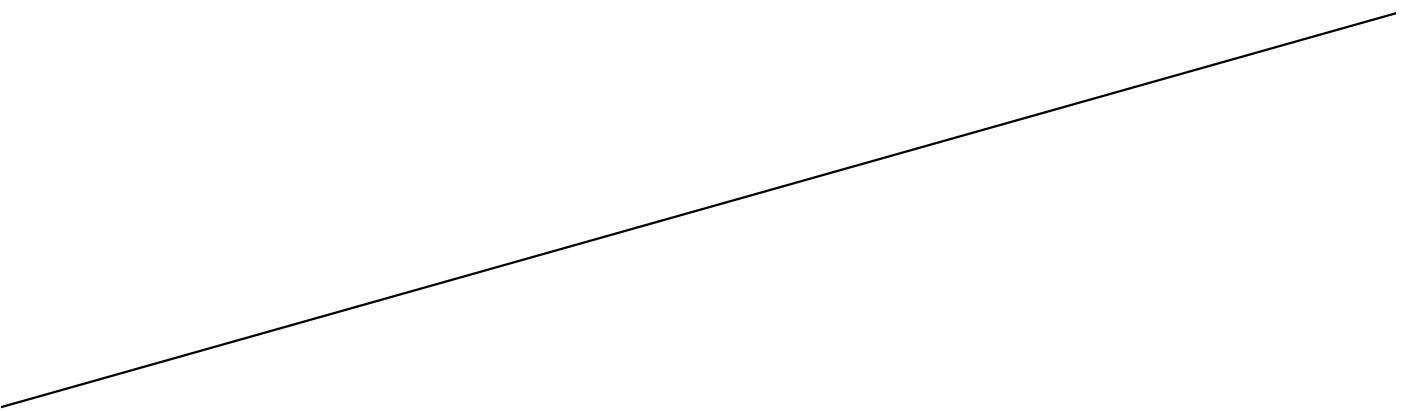


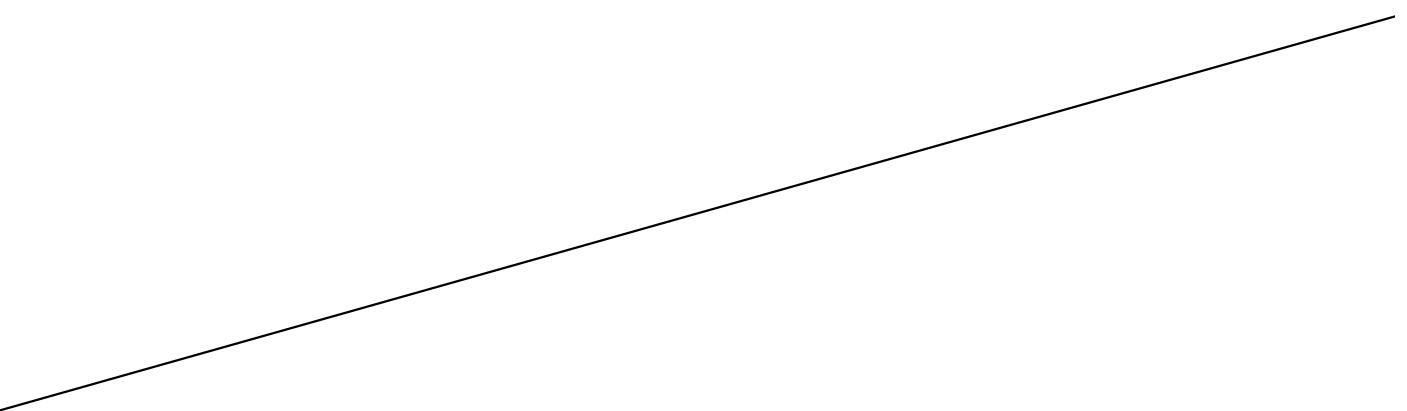


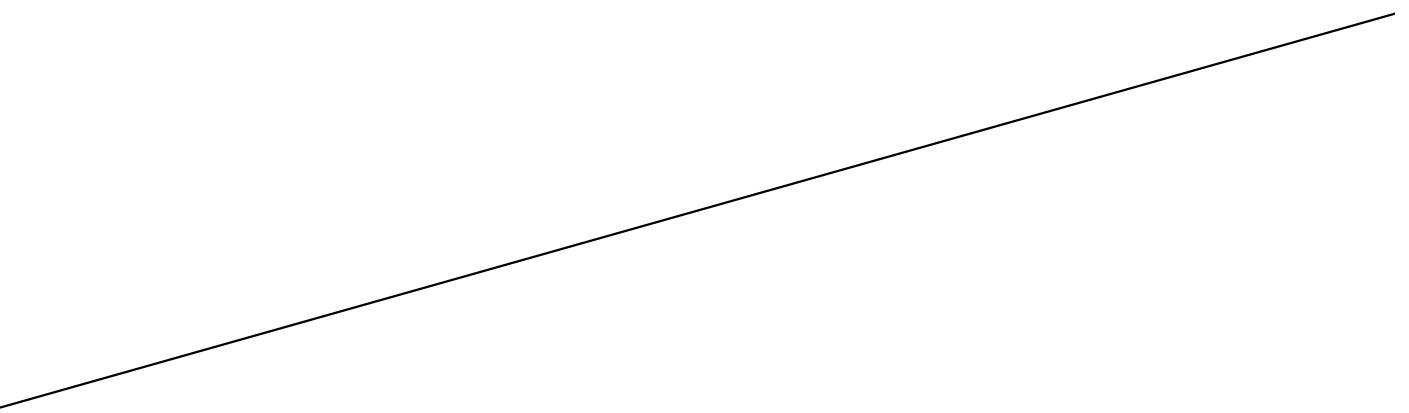


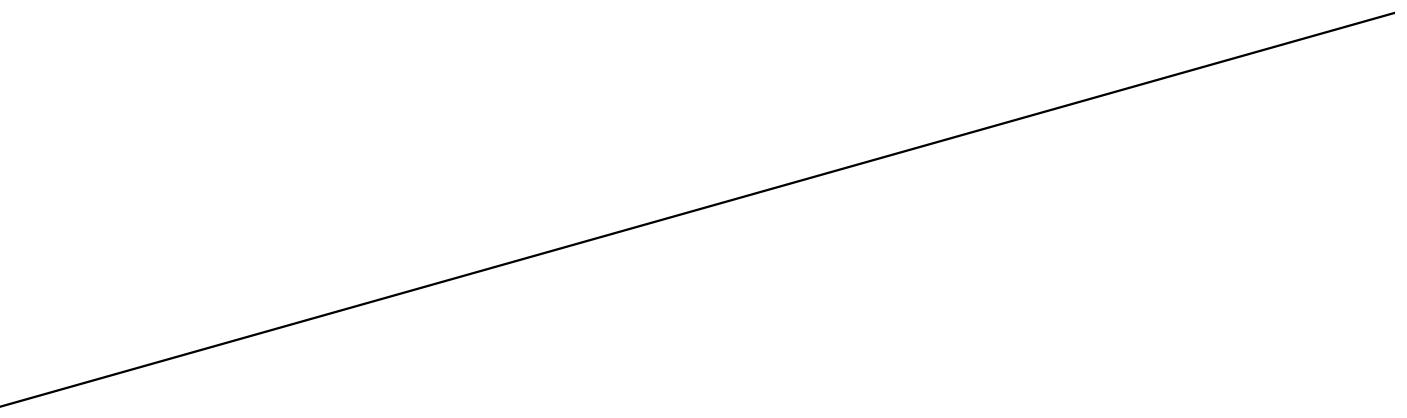


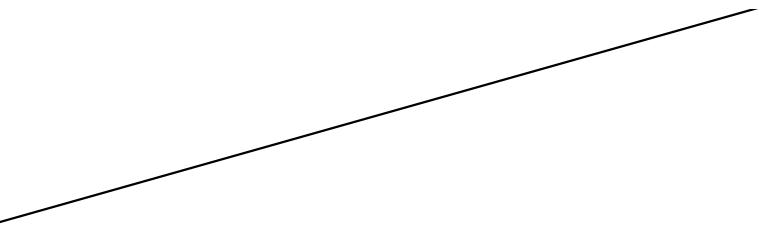













```
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment( in environment: IEnvironment)
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
```

```
createCountingClassMutater
```

```
createClassMutater
```

```
checkMethod
```

```
checkAnnotationDefault
```

```
checkAnnotation
```

```
checkParameterAnnotation
```

```
checkAttribute
```

```
checkCode
```

```
checkInsn
```

```
checkIntInsn
```

```
checkVarInsn
```

```
checkTypeInsn
```

```
checkFieldInsn
```

```
checkMethodInsn
```

```
checkJumpInsn
```

```
checkLabel
```

```
checkLdcInsn
```

```
checkLineInsn
```

```
checkTableSwitchInsn
```

```
checkLookupSwitchInsn
```

```
checkMultiANewArrayInsn
```

```
checkTryCatchBlock
```

```
checkLocalVariable
```

```
checkEnd
```

```
mutateAnnotationDefault
```

```
mutateAnnotation
```

```
mutateParameterAnnotation
```

```
mutateAttribute
```

```
mutateCode
```

```
mutateInsn
```

```
mutateIntInsn
```

```
mutateVarInsn
```

```
mutateTypeInsn
```

```
mutateFieldInsn
```

```
mutateMethodInsn
```

```
mutateJumpInsn
```

```
mutateLabel
```

```
mutateLdcInsn
```

```
mutateLineInsn
```

```
mutateTableSwitchInsn
```

```
mutateLookupSwitchInsn
```

```
mutateMultiANewArrayInsn
```

```
mutateTryCatchBlock
```

```
mutateLocalVariable
```

```
mutateEnd
```

```
ClassMutater
```

```
getMutationPoints
```

```
mutate
```

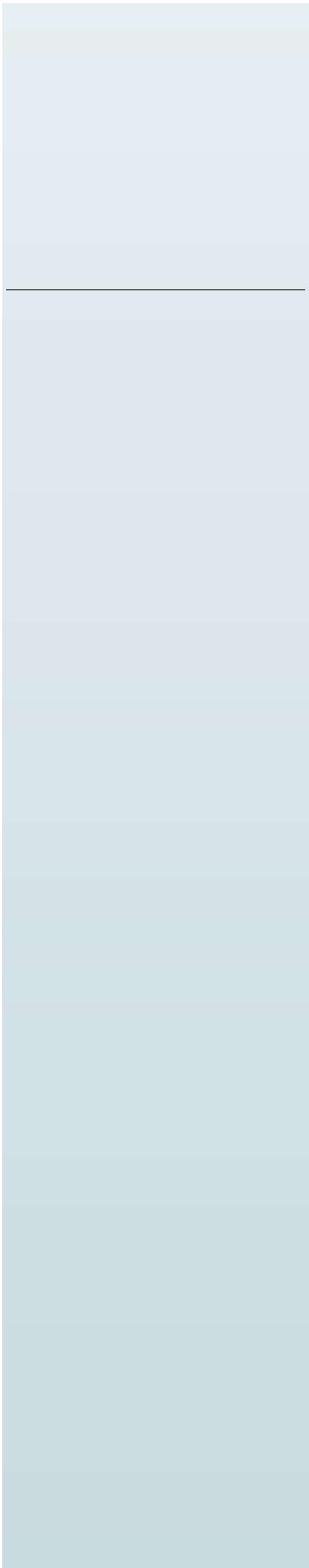
```
mutate
```

```
mutate
```

```
createClassWriter
```

```
getReaderFlags
```

```
getClassWriterFlags
```





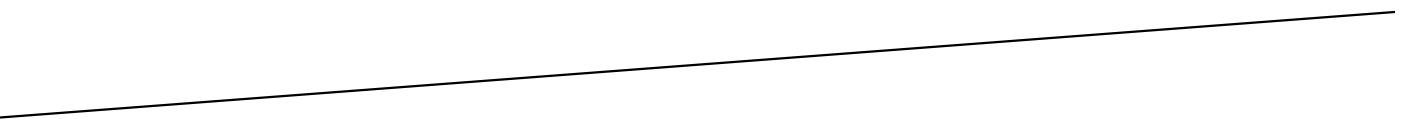






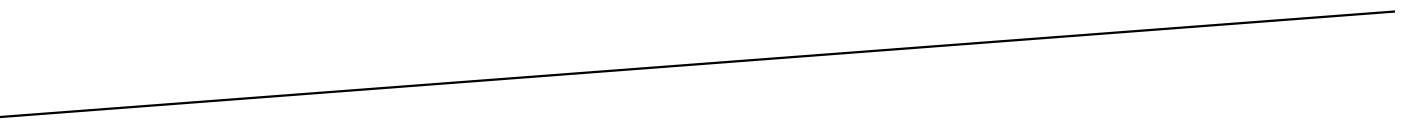


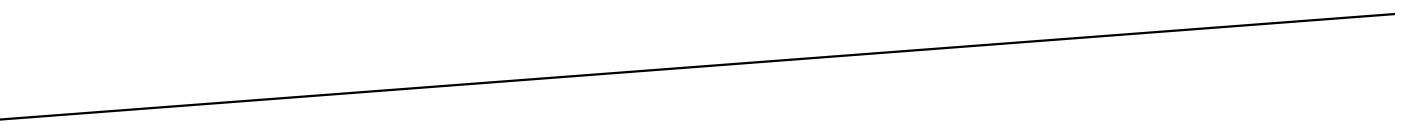


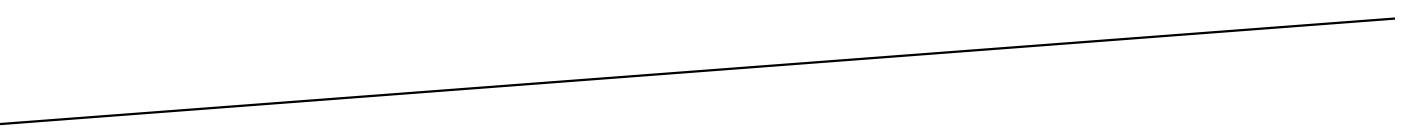


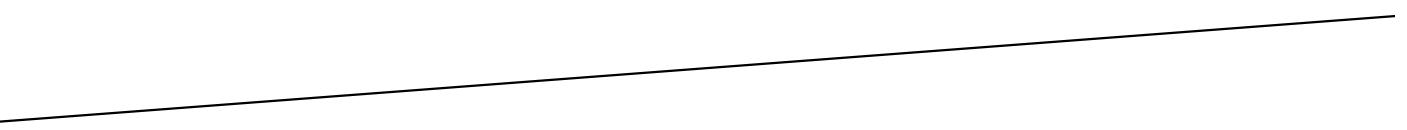




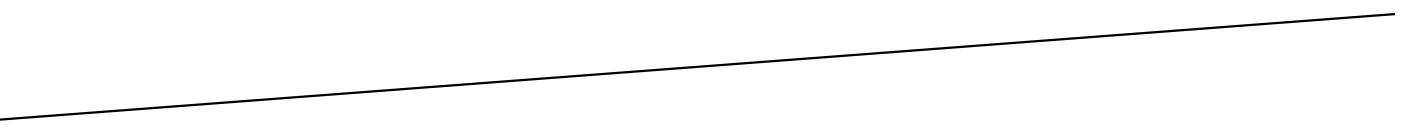






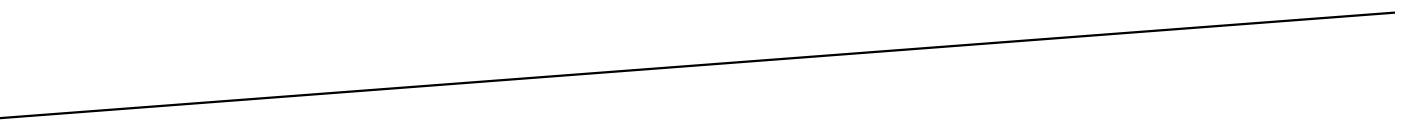










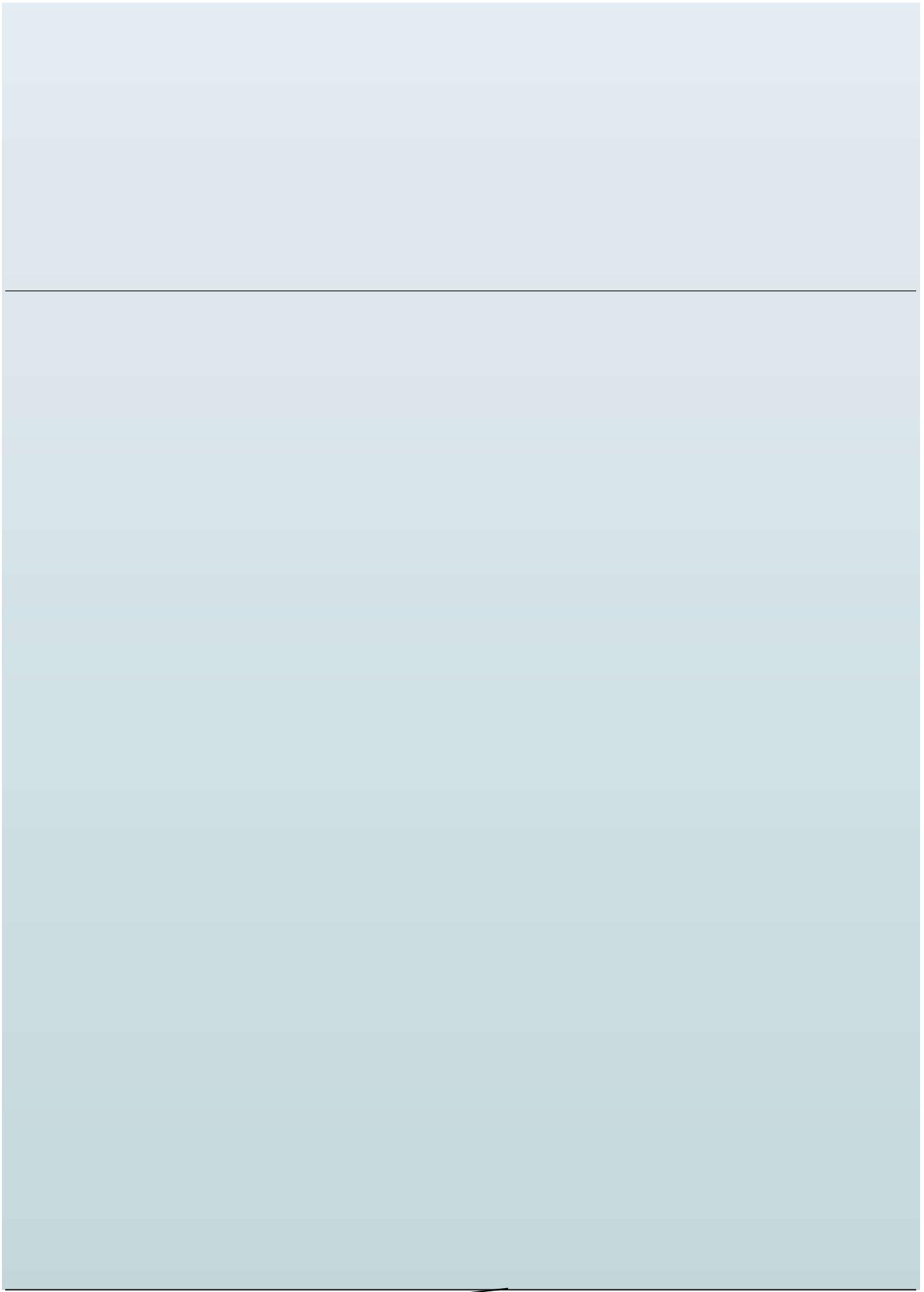


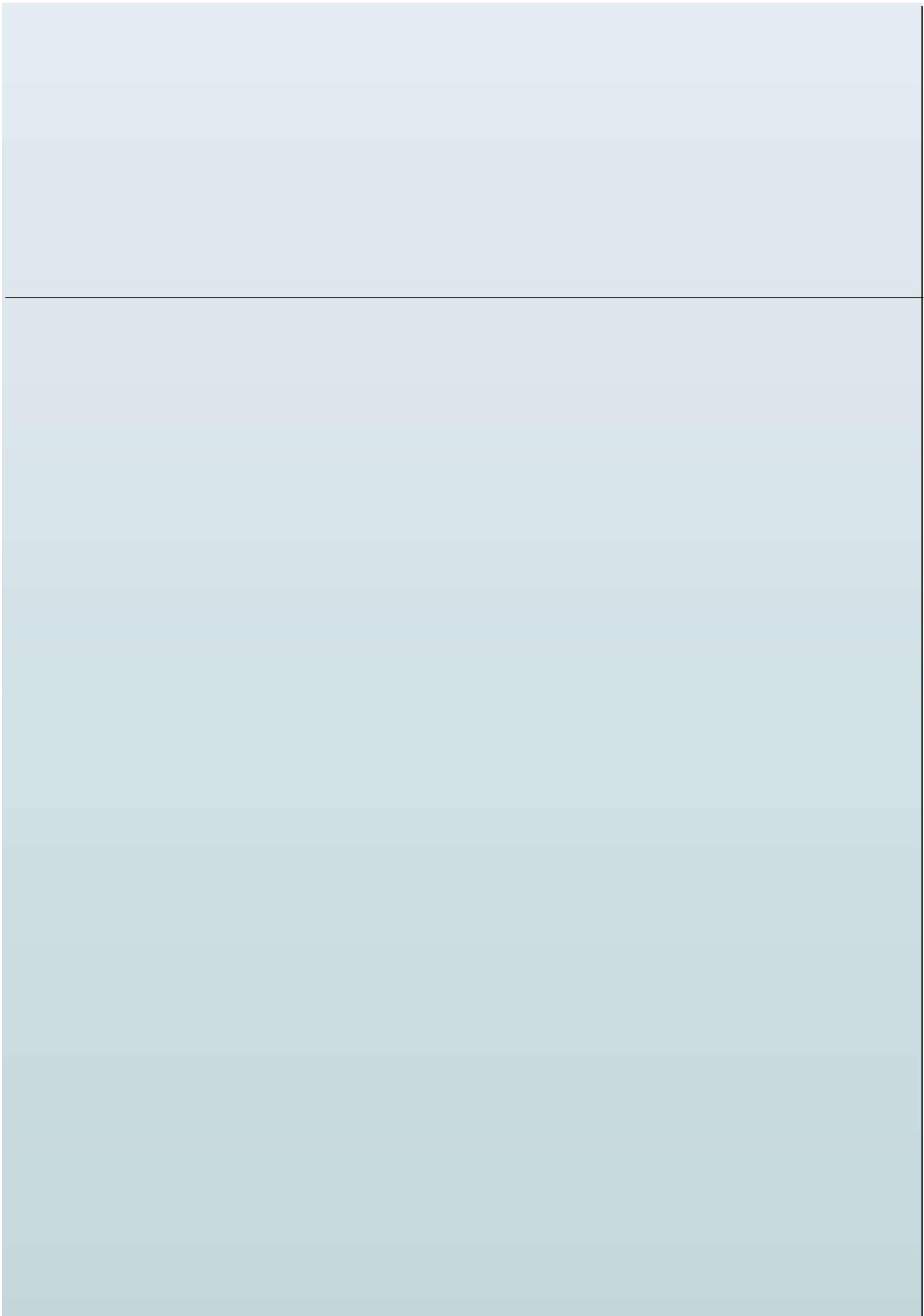





```
«Synchronized» + canRetry(): boolean
+ getRetries(): int
+ getSerialVersionUID(): long
+ getClientId()
+ getClientId( in null: <Undefined>)
+ run()
+ run( in null: <Undefined>)
+ run(): IClassMutationResult
+ run( in null: <Undefined>): IClassMutationResult
+ run( in param: <Undefined>): IClassMutationResult
+ run( in param: Object): IClassMutationResult
+ canRetry()
+ canRetry( in null: <Undefined>)

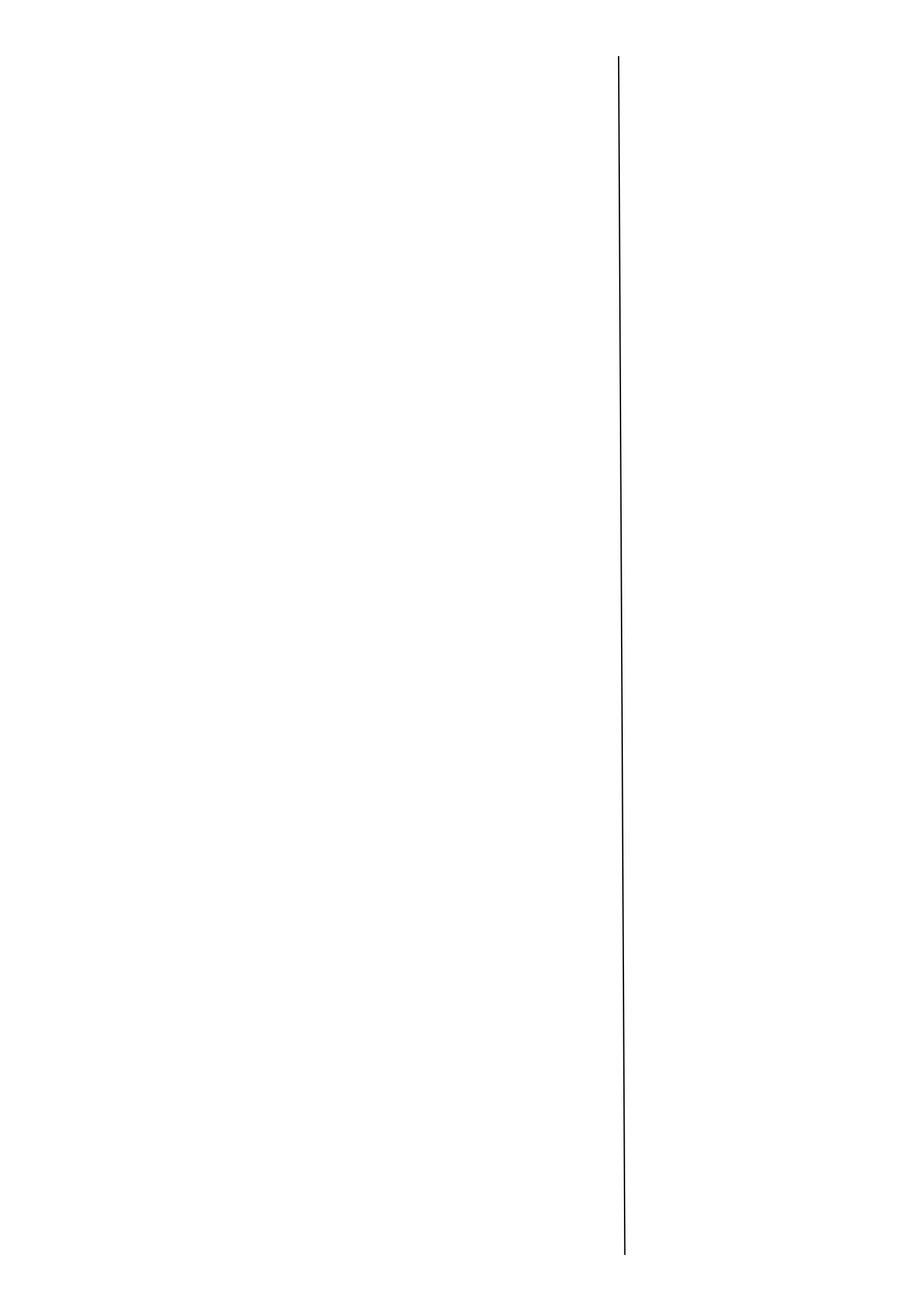
HomMutationWork
run
searchBestHom
createHomFactory
createDataCollector
getObjectives
getExecutor
getFilter
getMaxMutationOrder
MutationWork
run
collectSummaryData
computeInitialTestsDuration
init
initReset
mutate
getBytecode
generateFoms
mutate
getEvaluator
getStatistic
setStatistic
getKind
setKind
getTargetClass
getOperators
setOperators
getCache
setCache
getResultFormatter
 setResultFormatter
getSerialVersionUID
getclasspath
getEnvFactory
getTesterFactory
getOperatorsFactory
getMaxInfiniteLoopGuardTimeout
getTester
setTester
setEvaluator
getLOGGER
getWorkspace
AbstractWork
getClientId
canRetry
getRetries
getSerialVersionUID
```

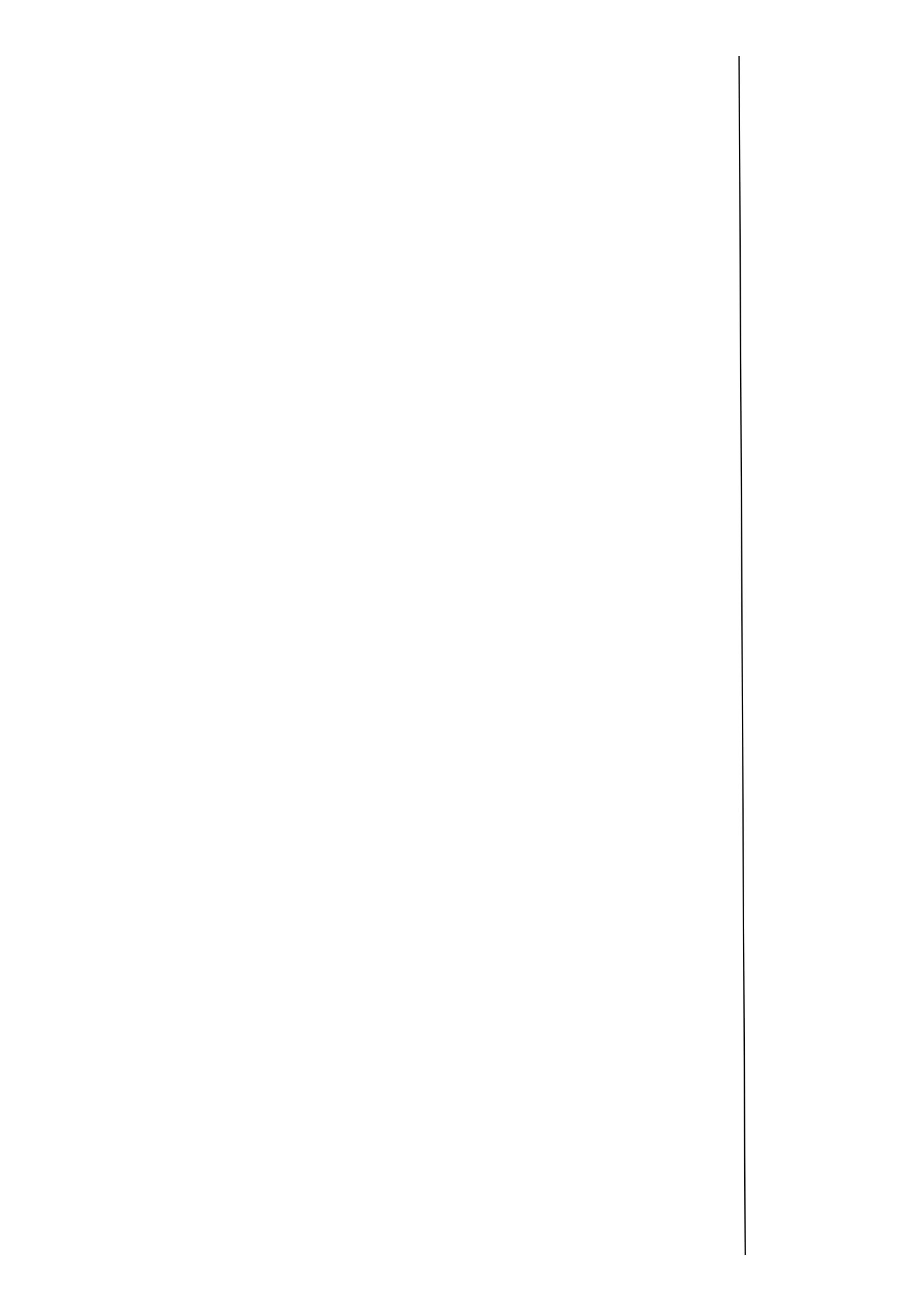


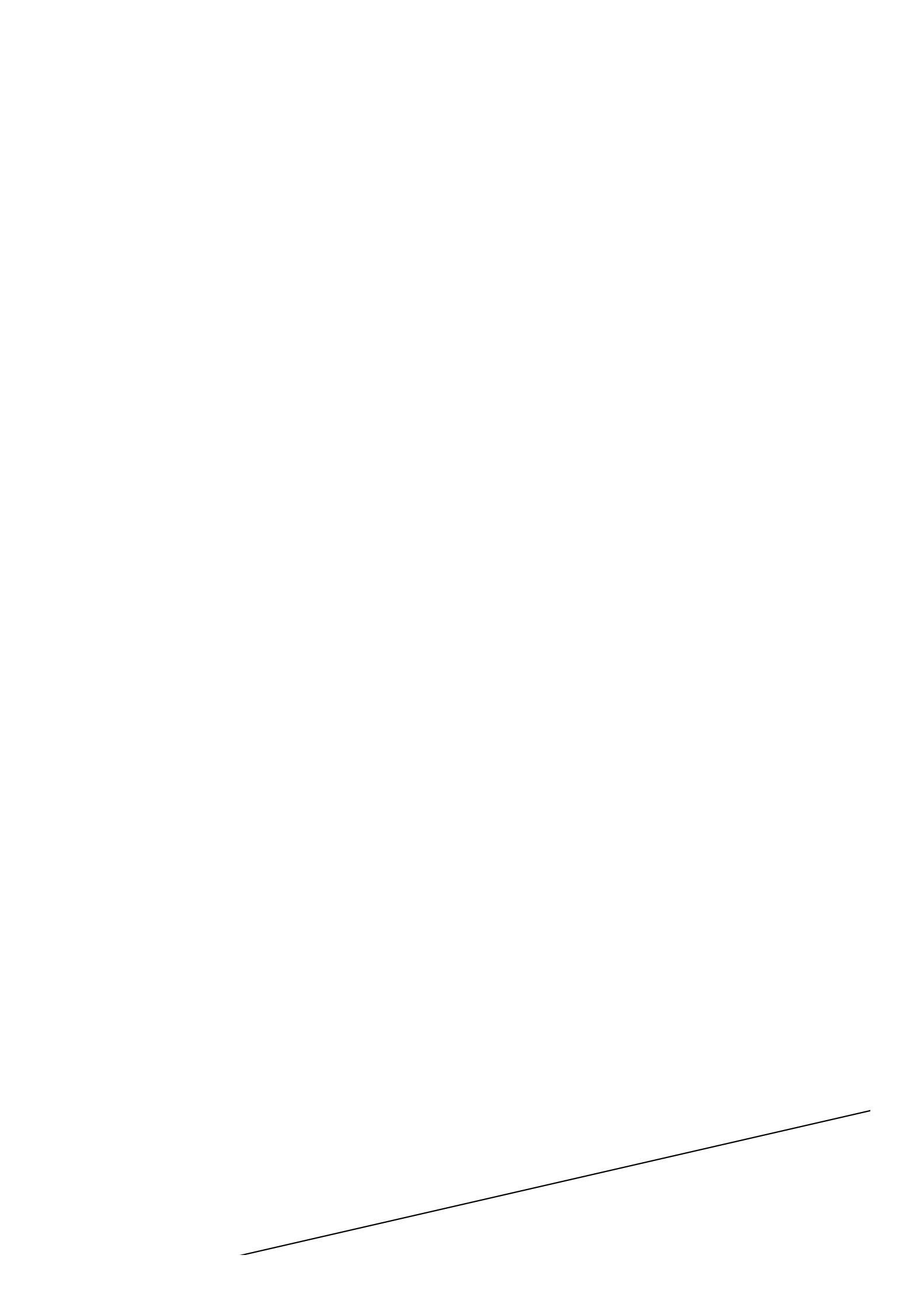


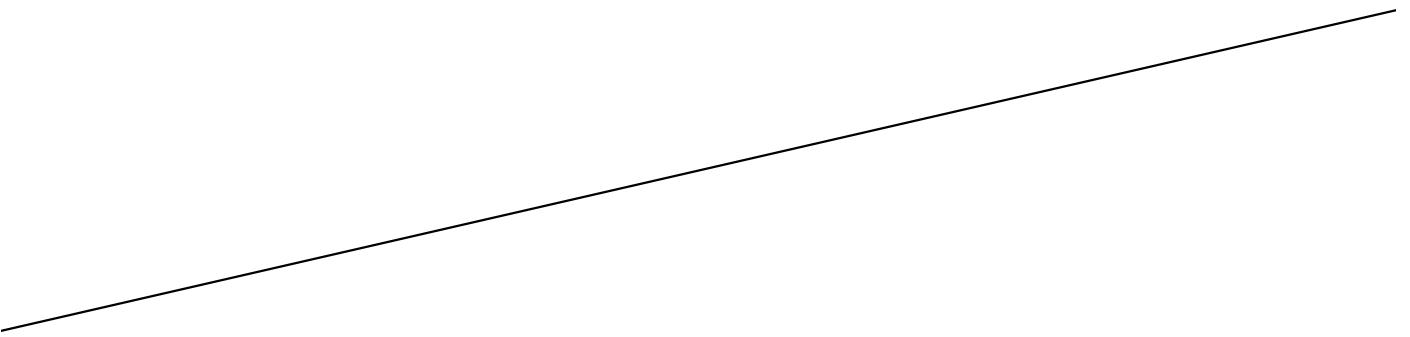
MutationClient implements IMutationClient

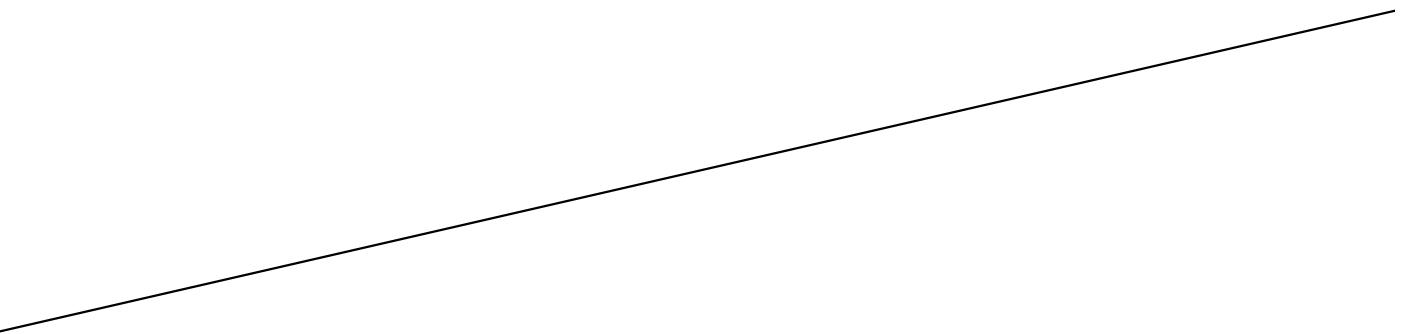
AbstractHomFactory implements HomFactory

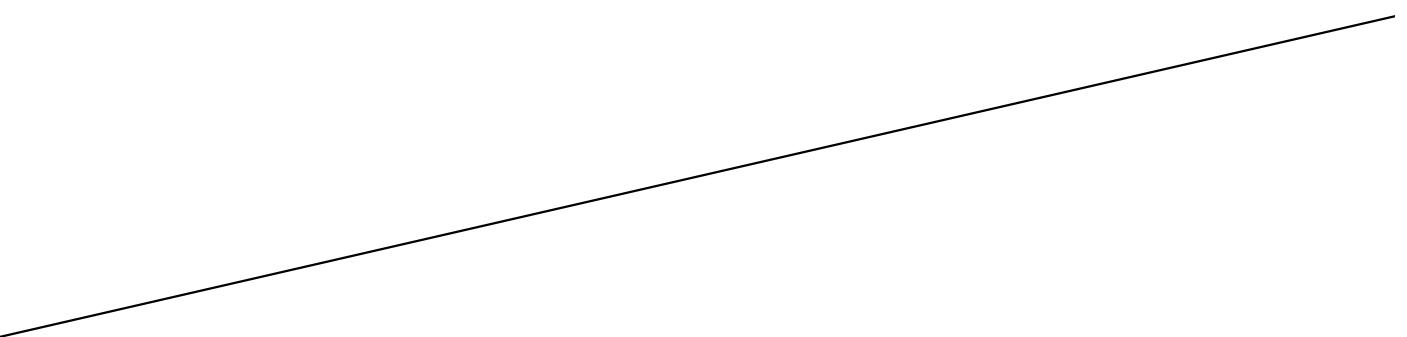


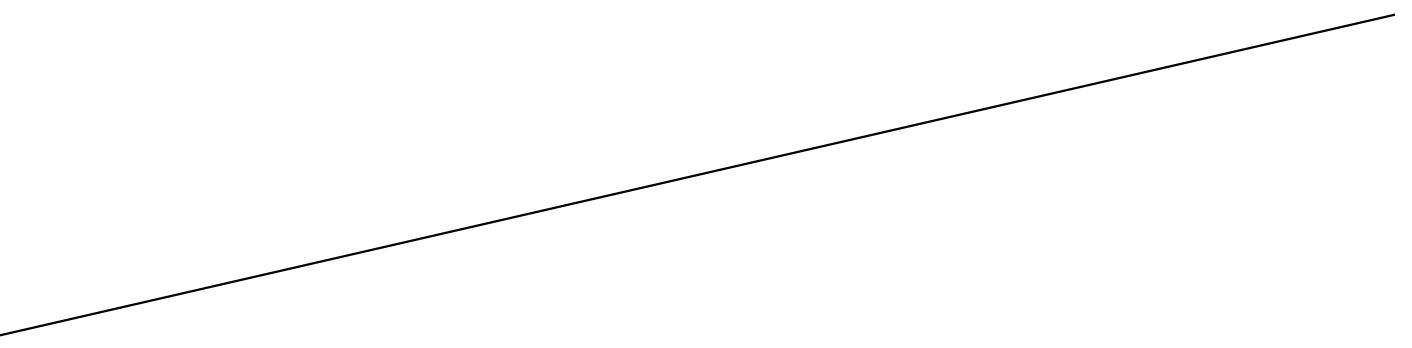


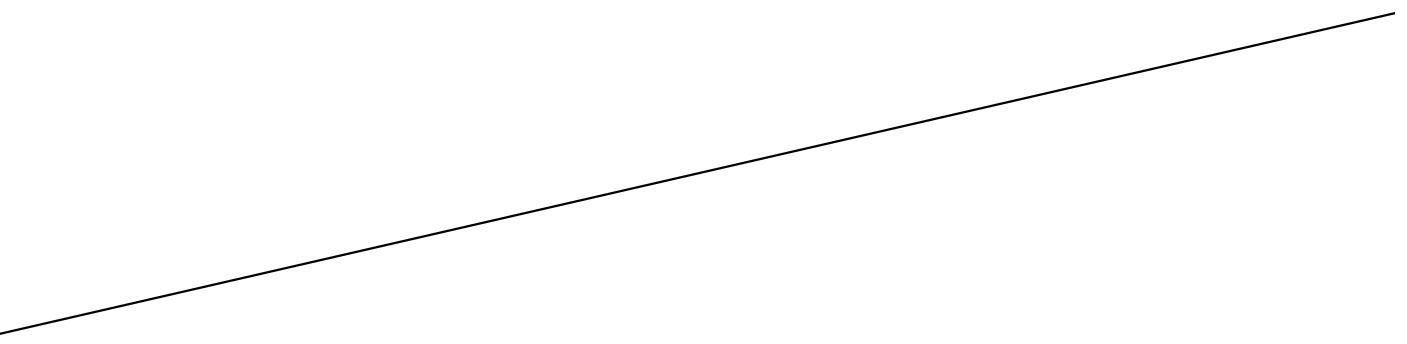


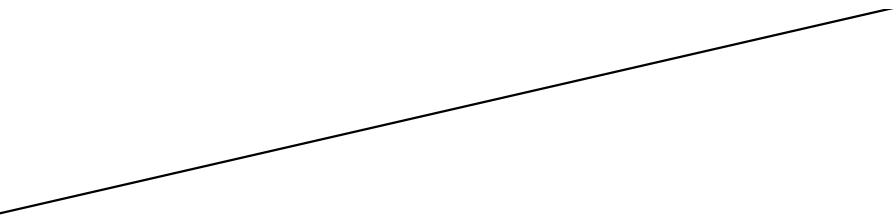


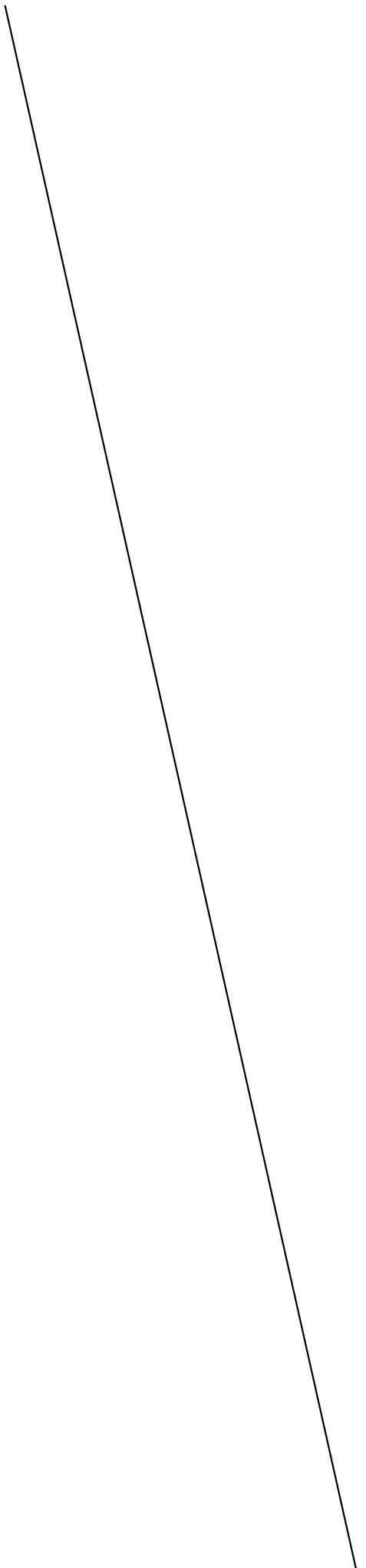






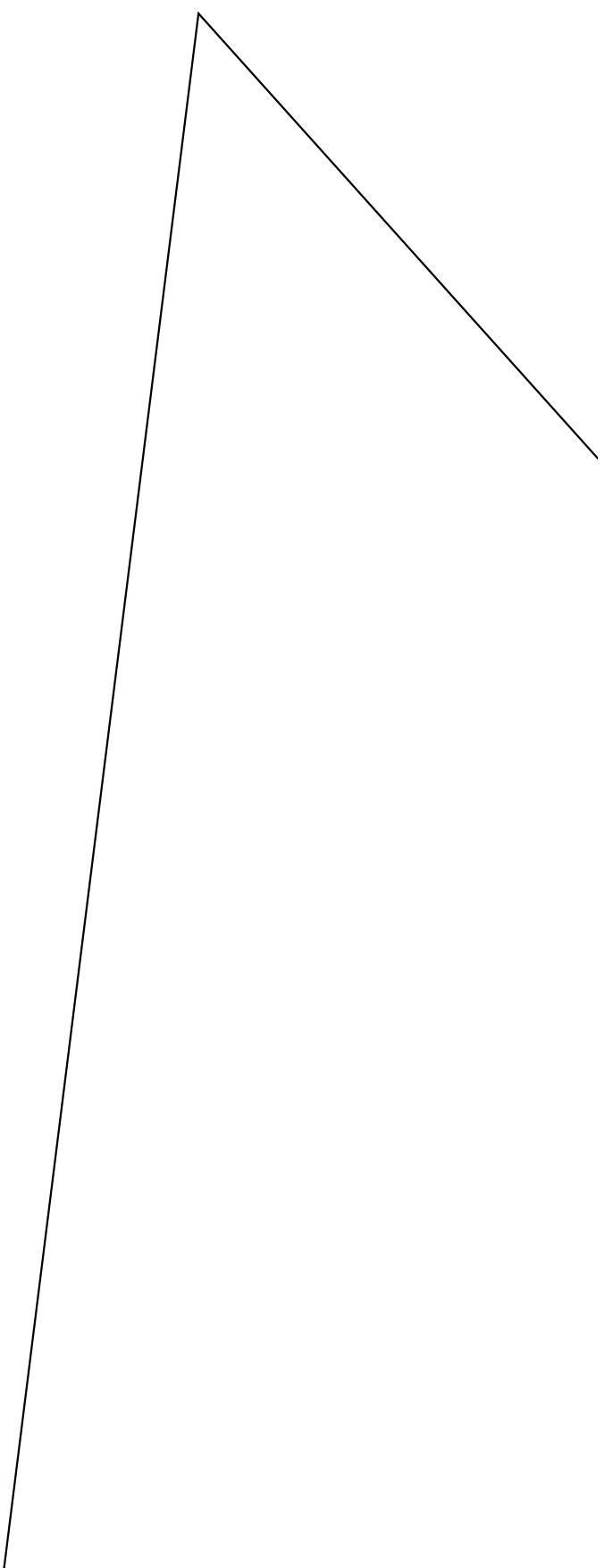


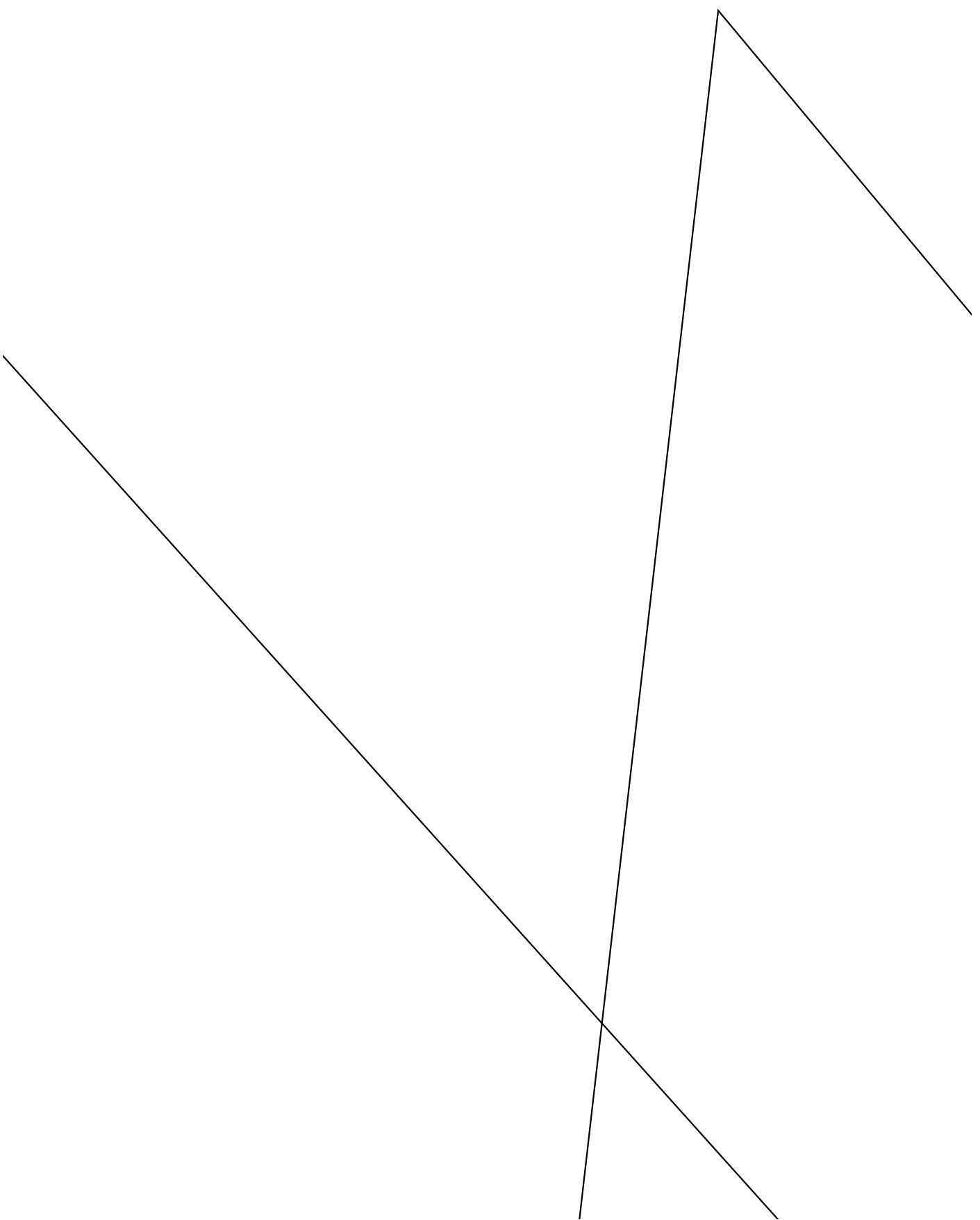


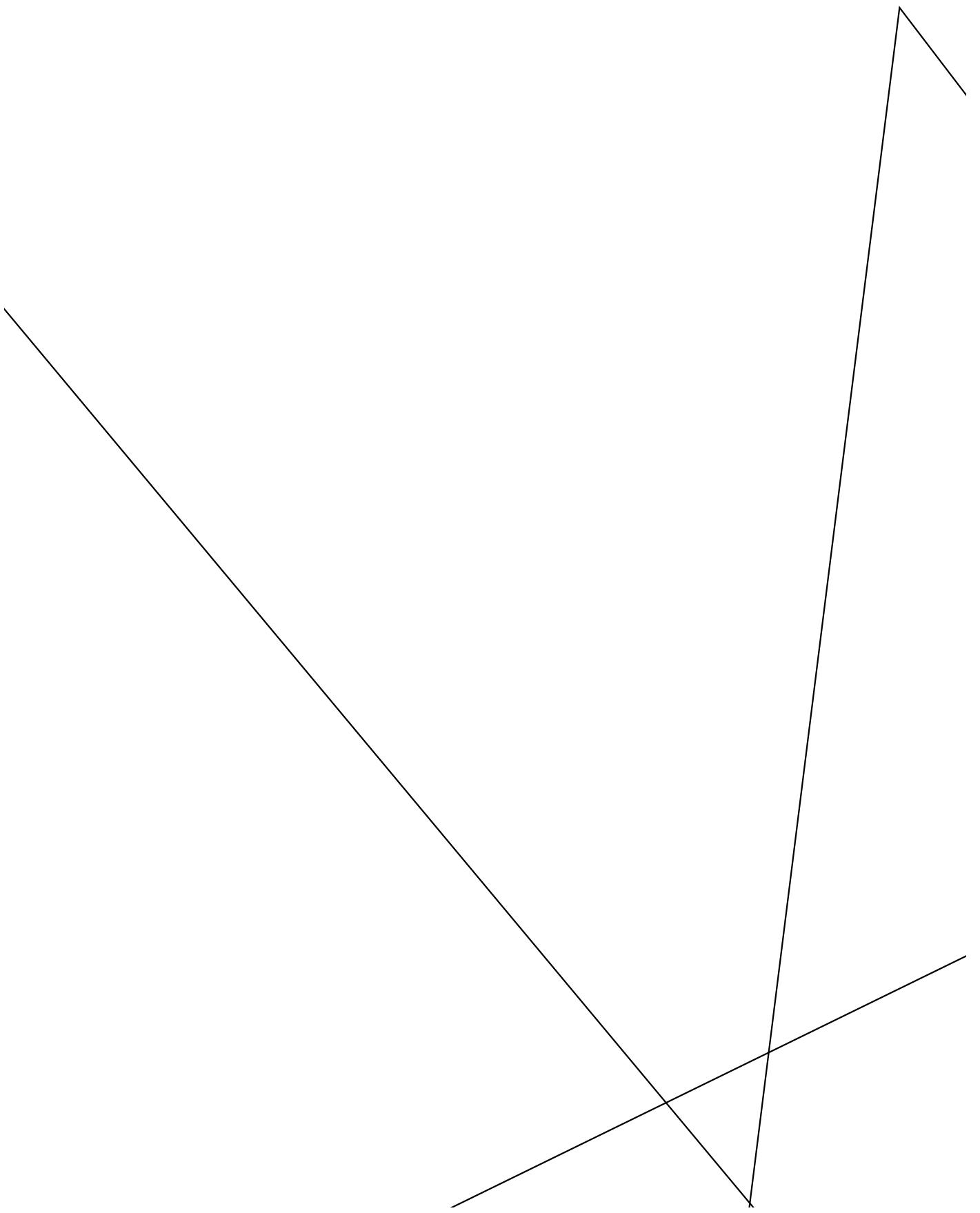


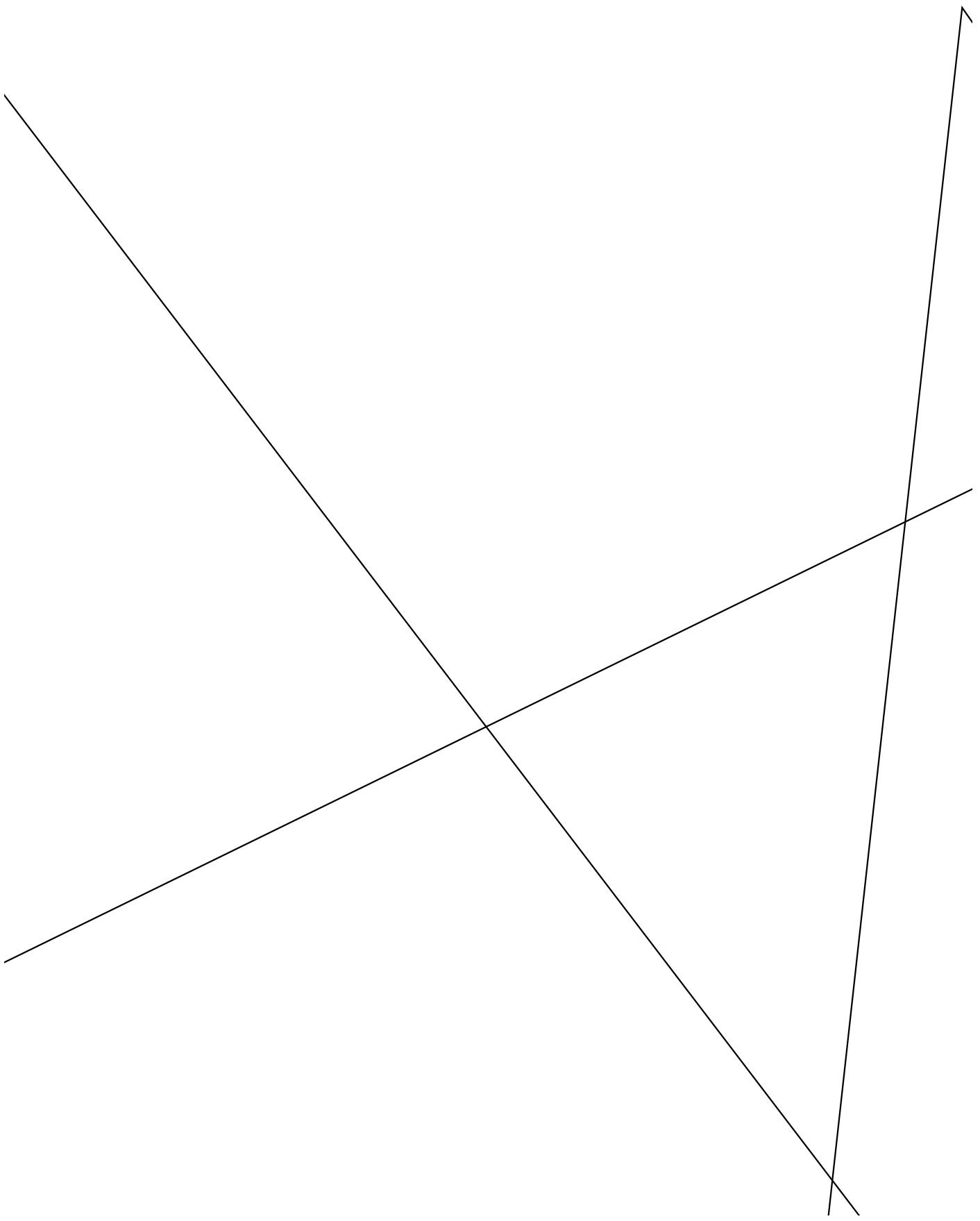
AbstractMethodMutater implements IMethodMutater

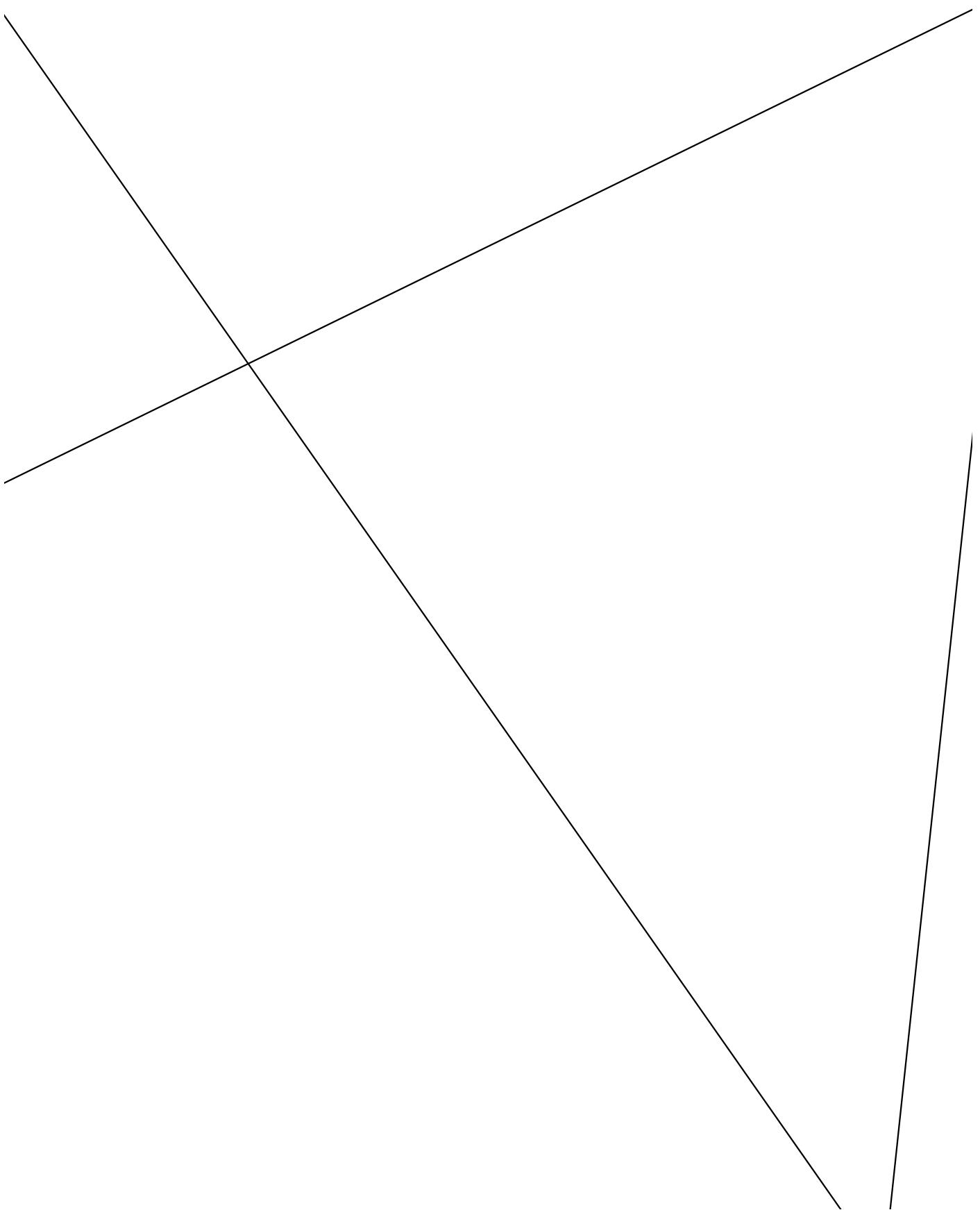
AbstractInvokerMethodVisitor implements MutationObservable



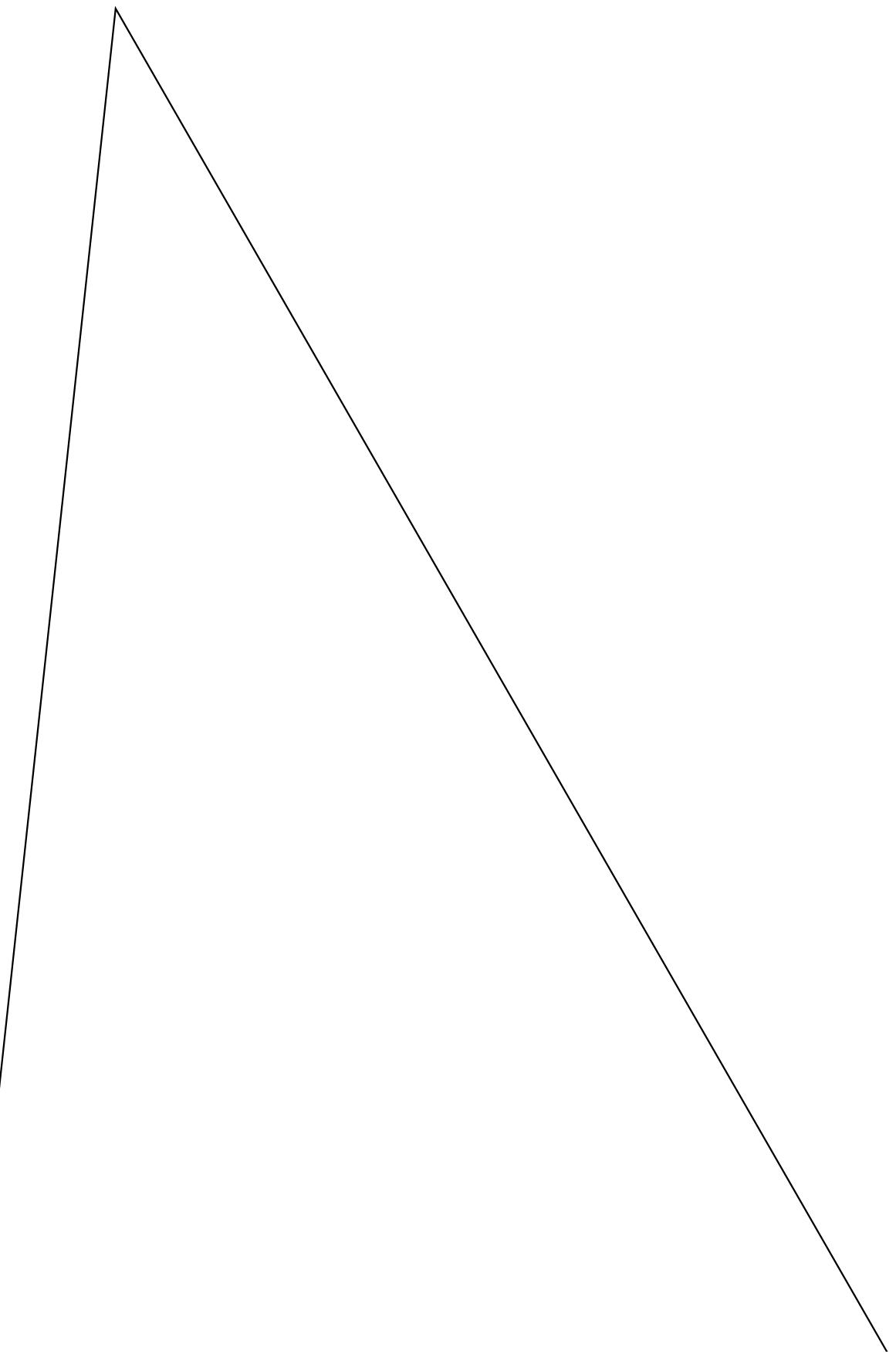


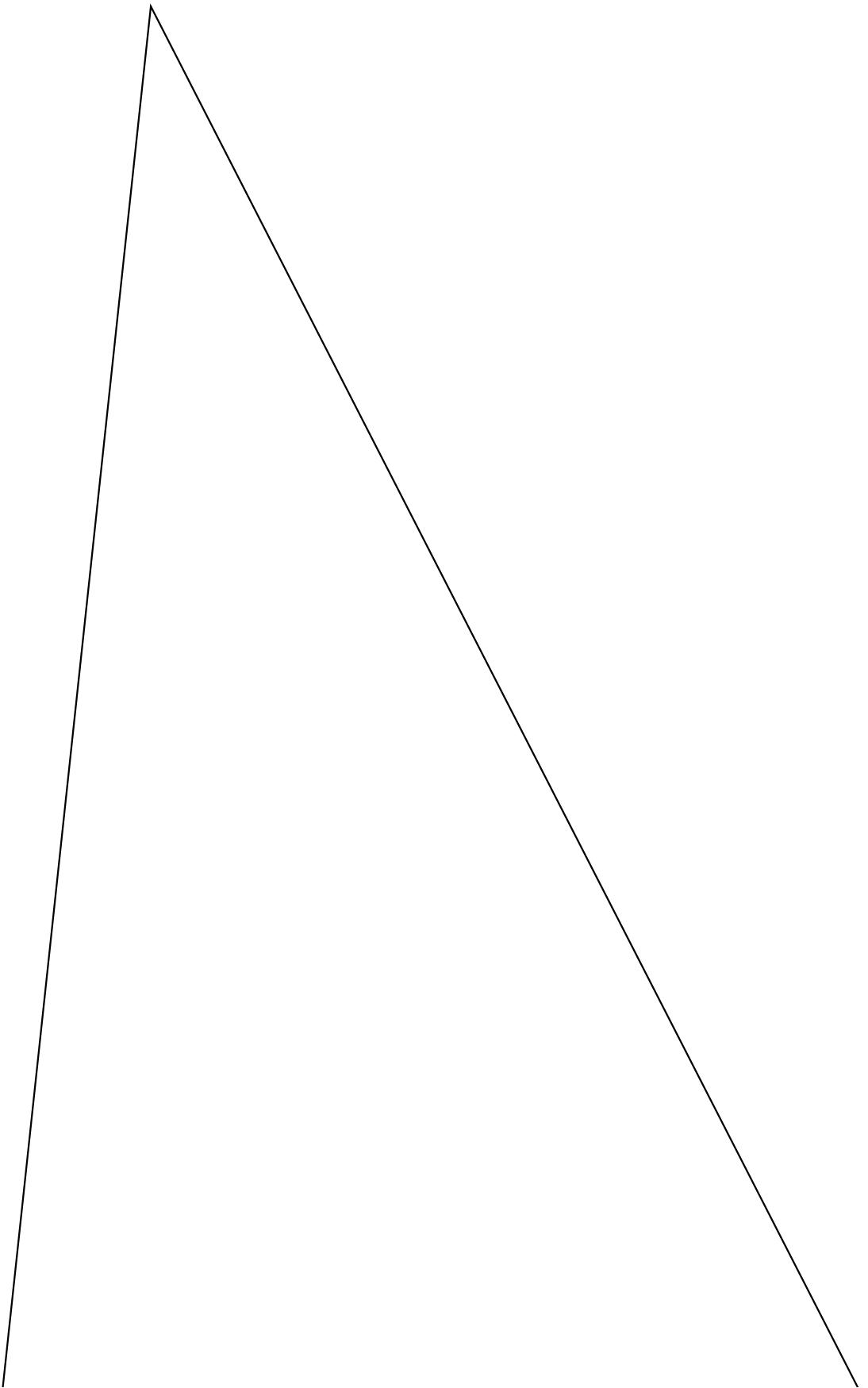


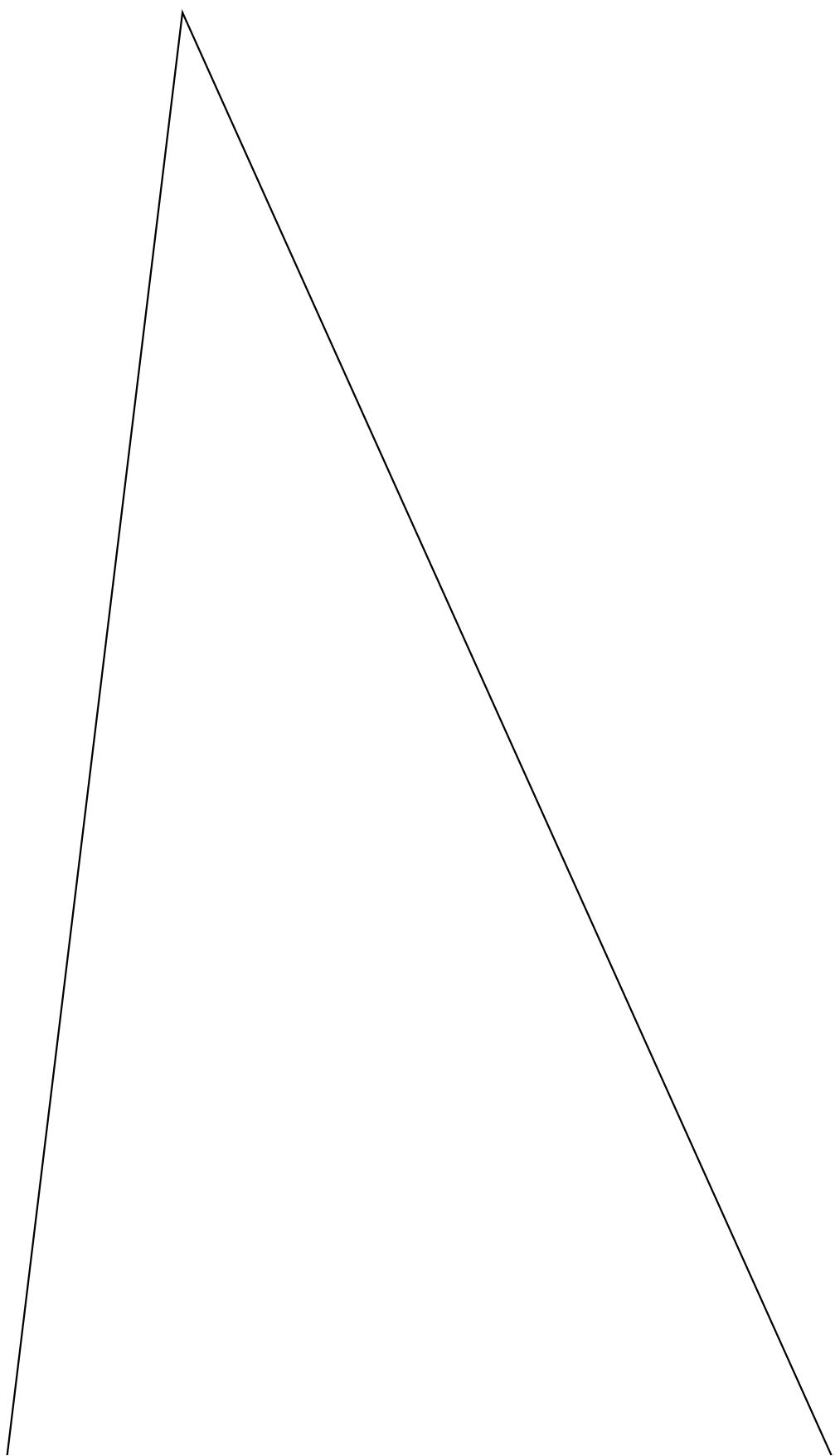


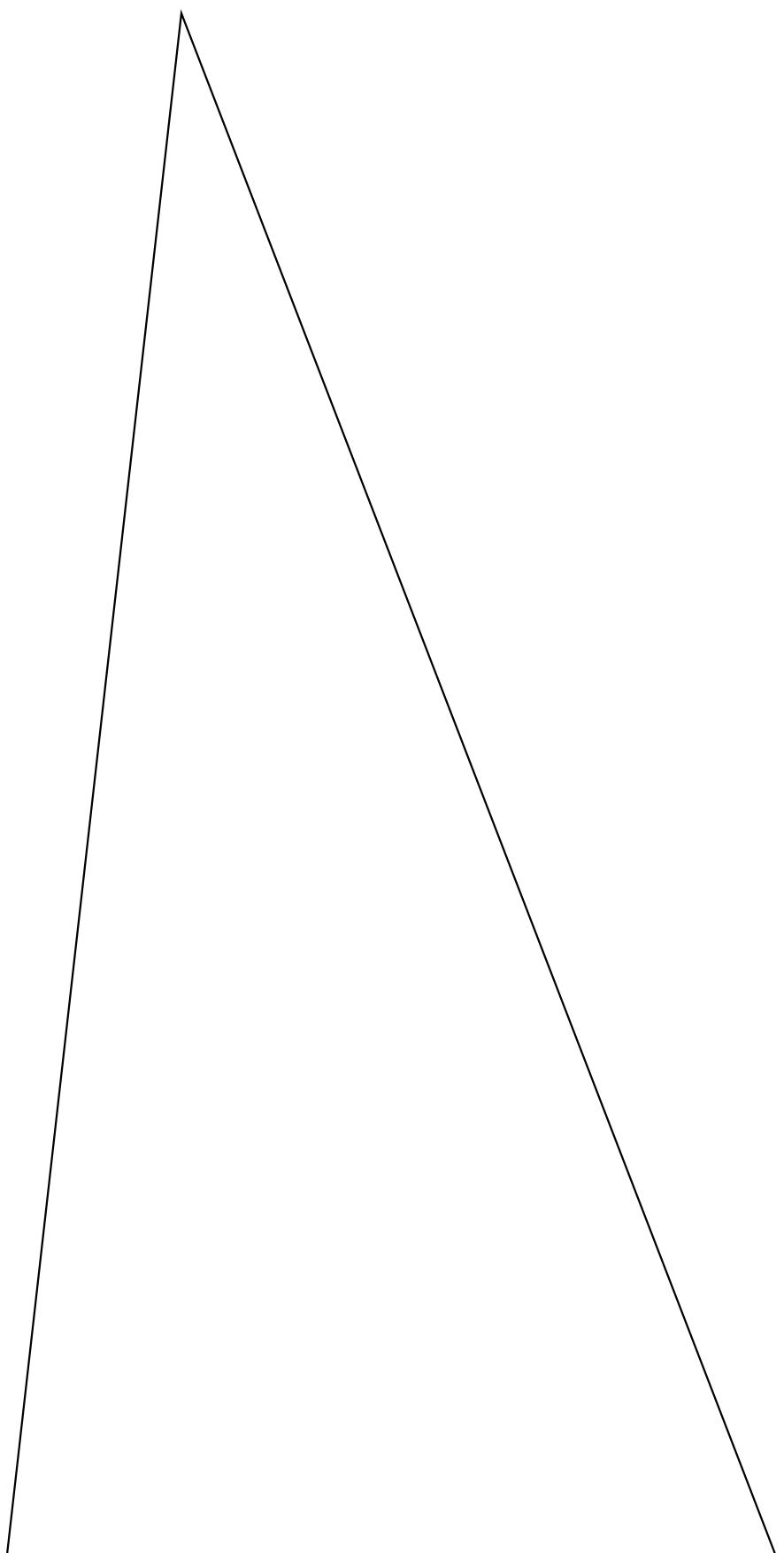


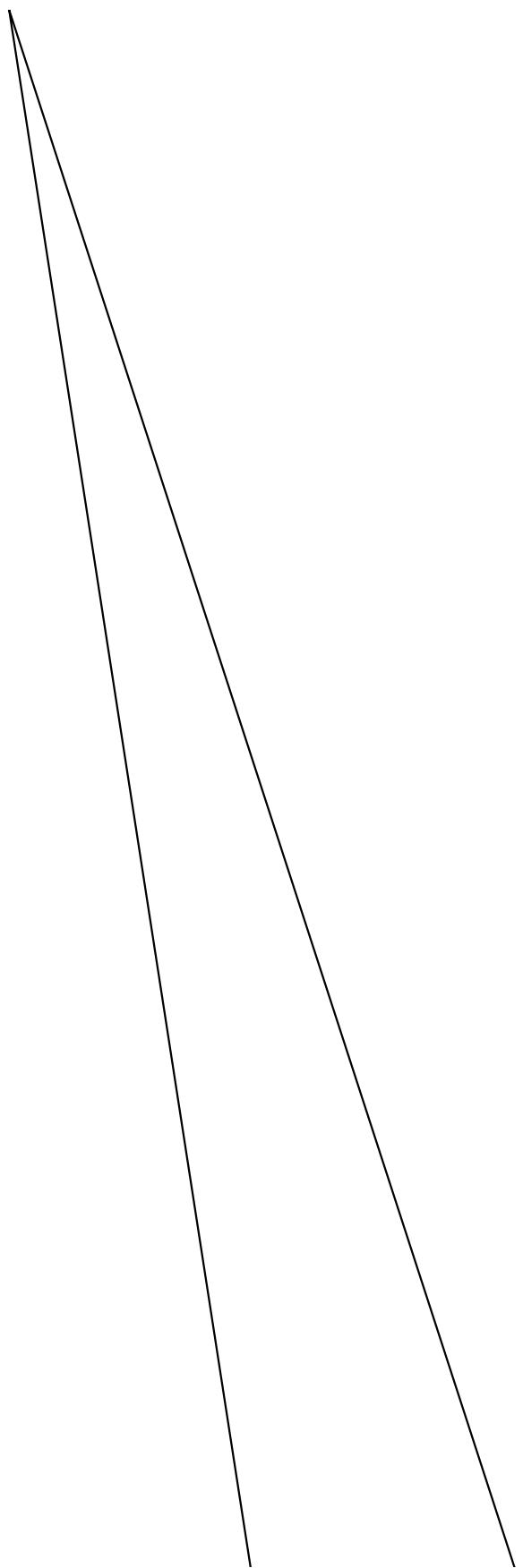


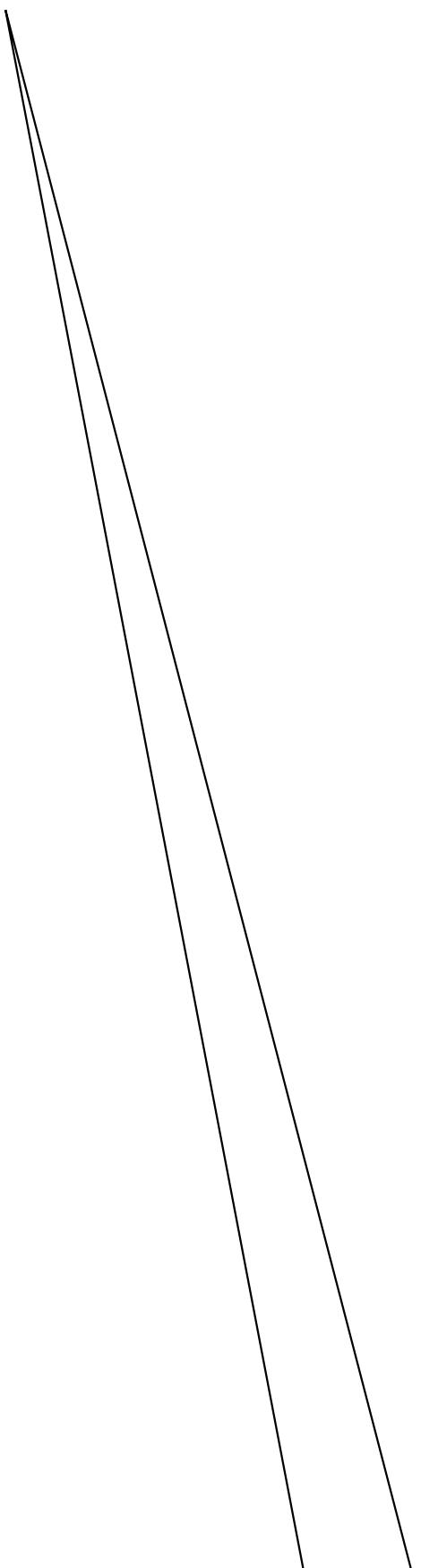






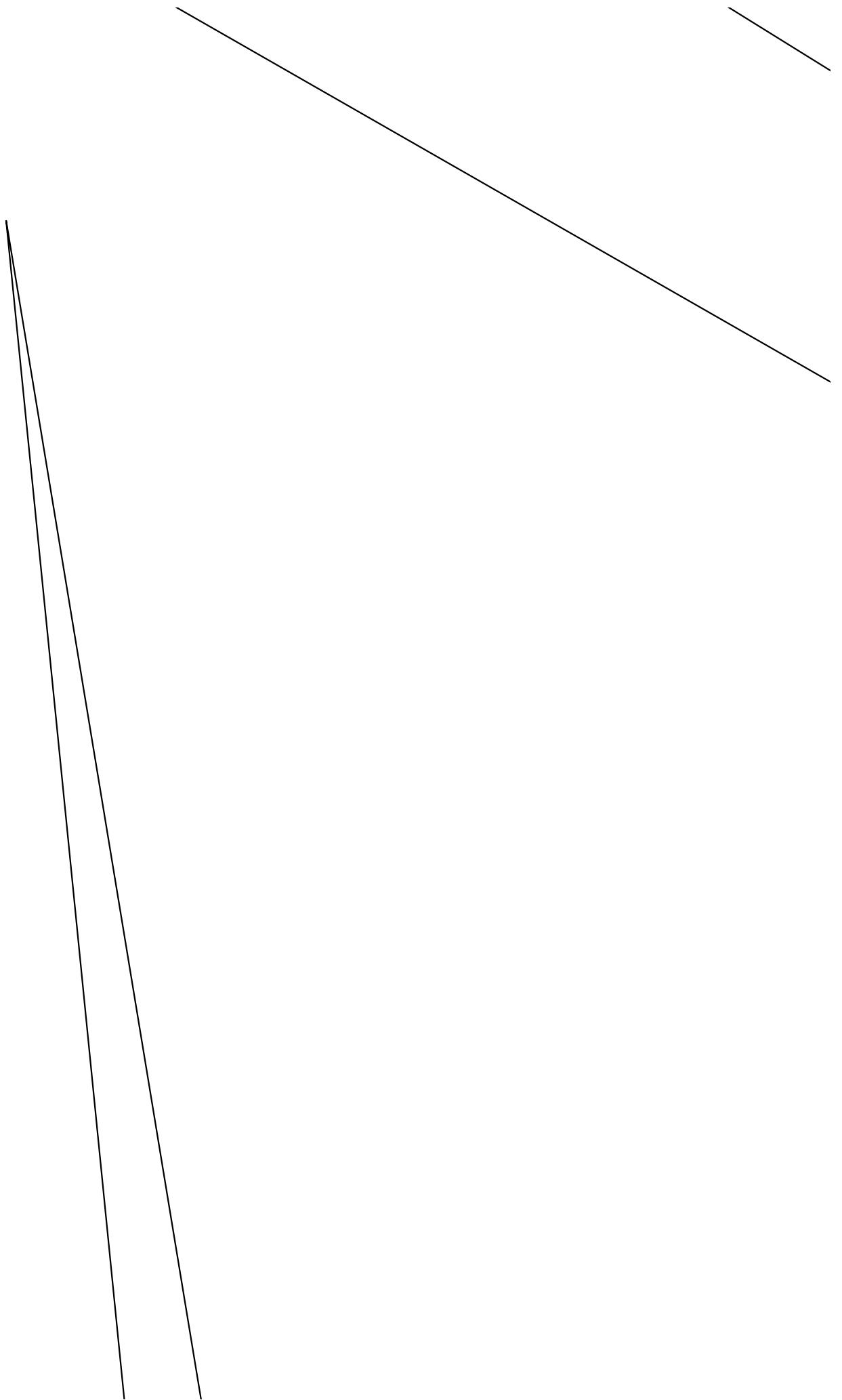


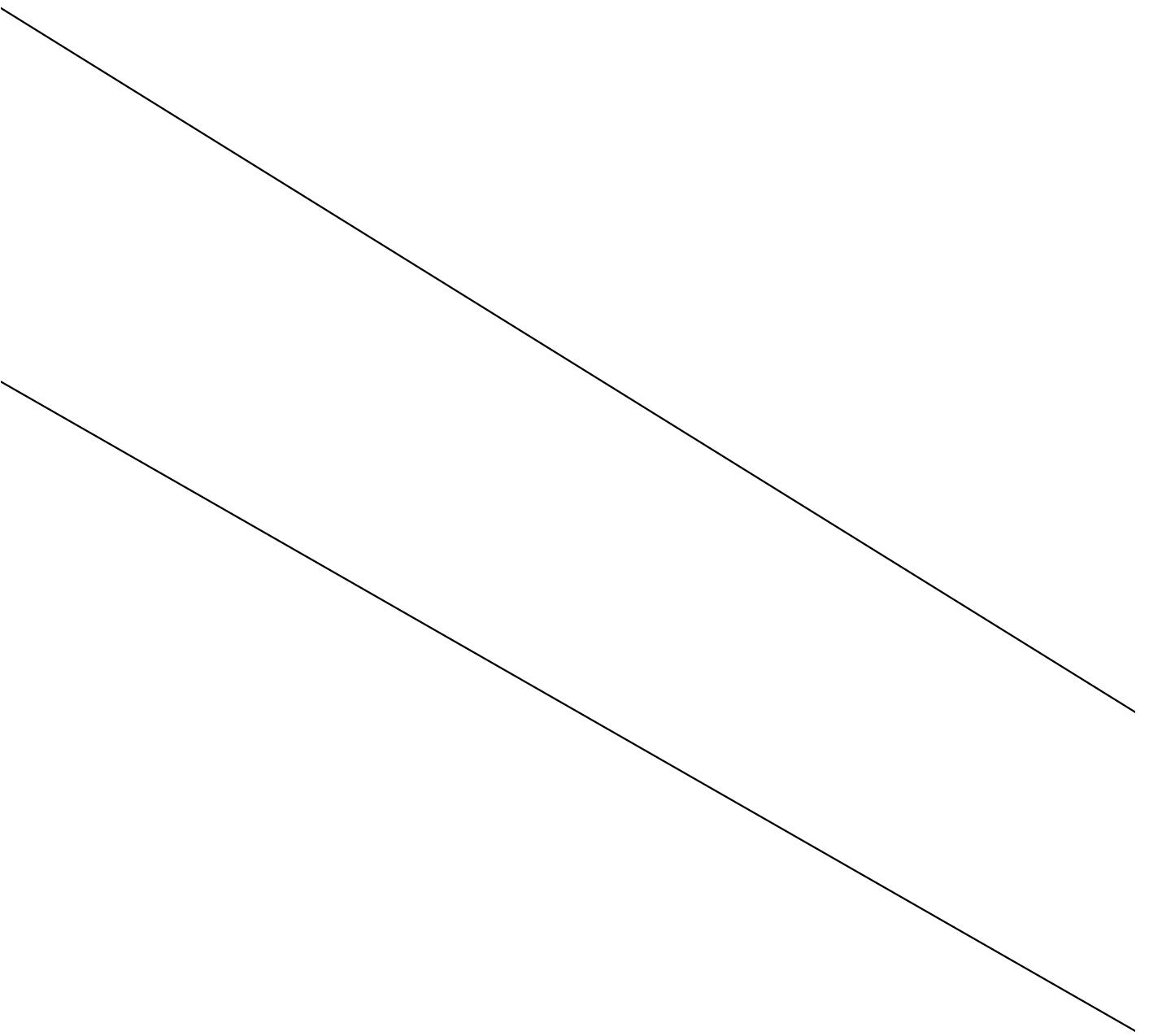


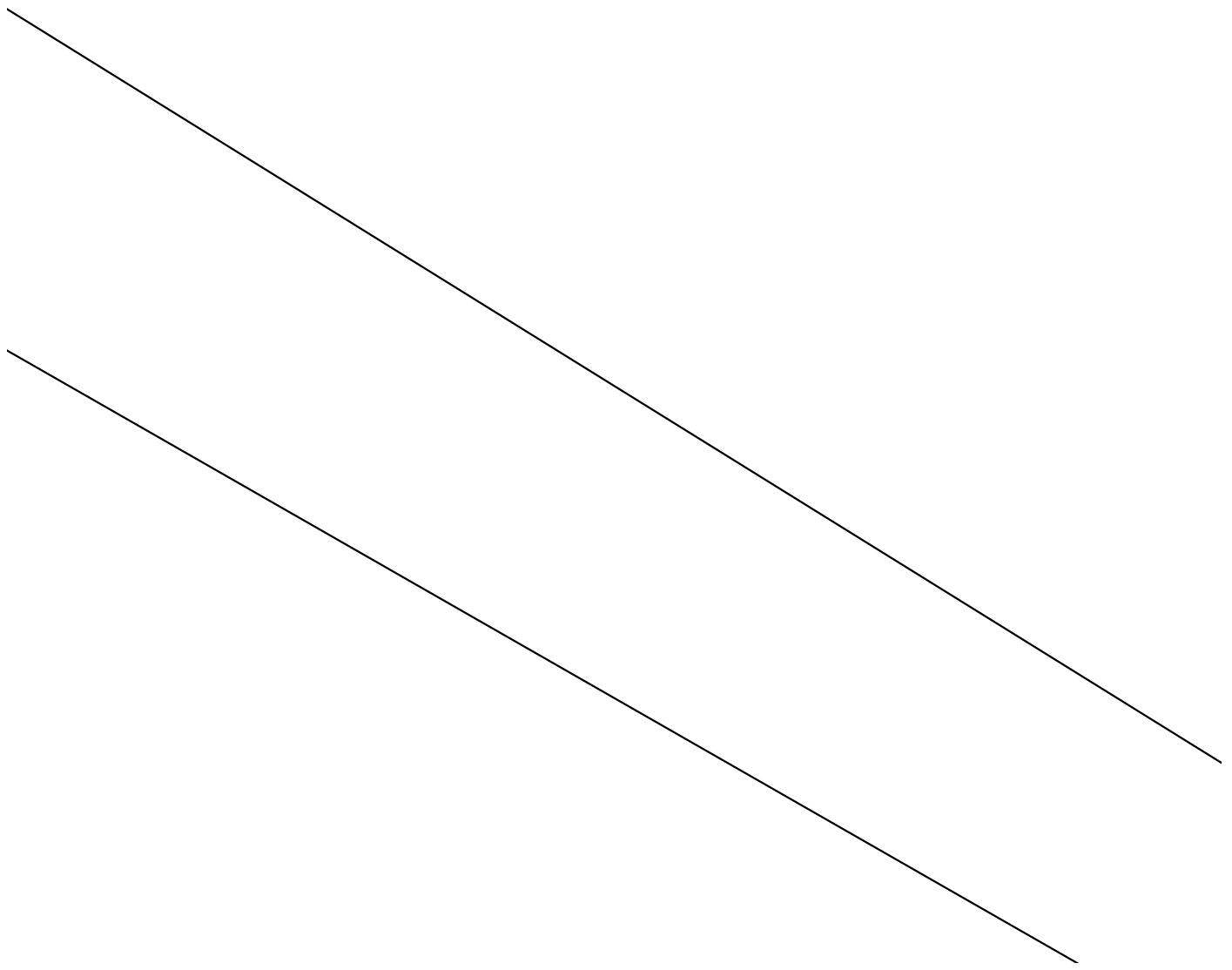
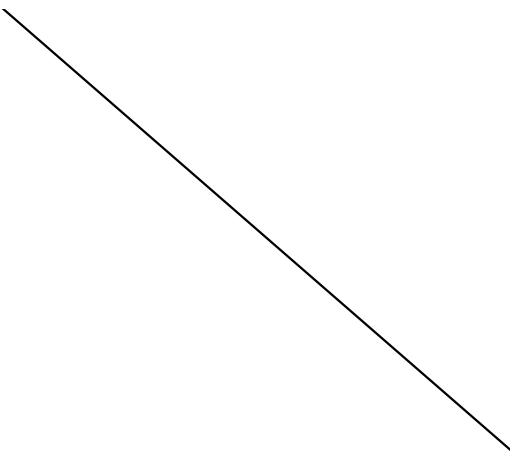


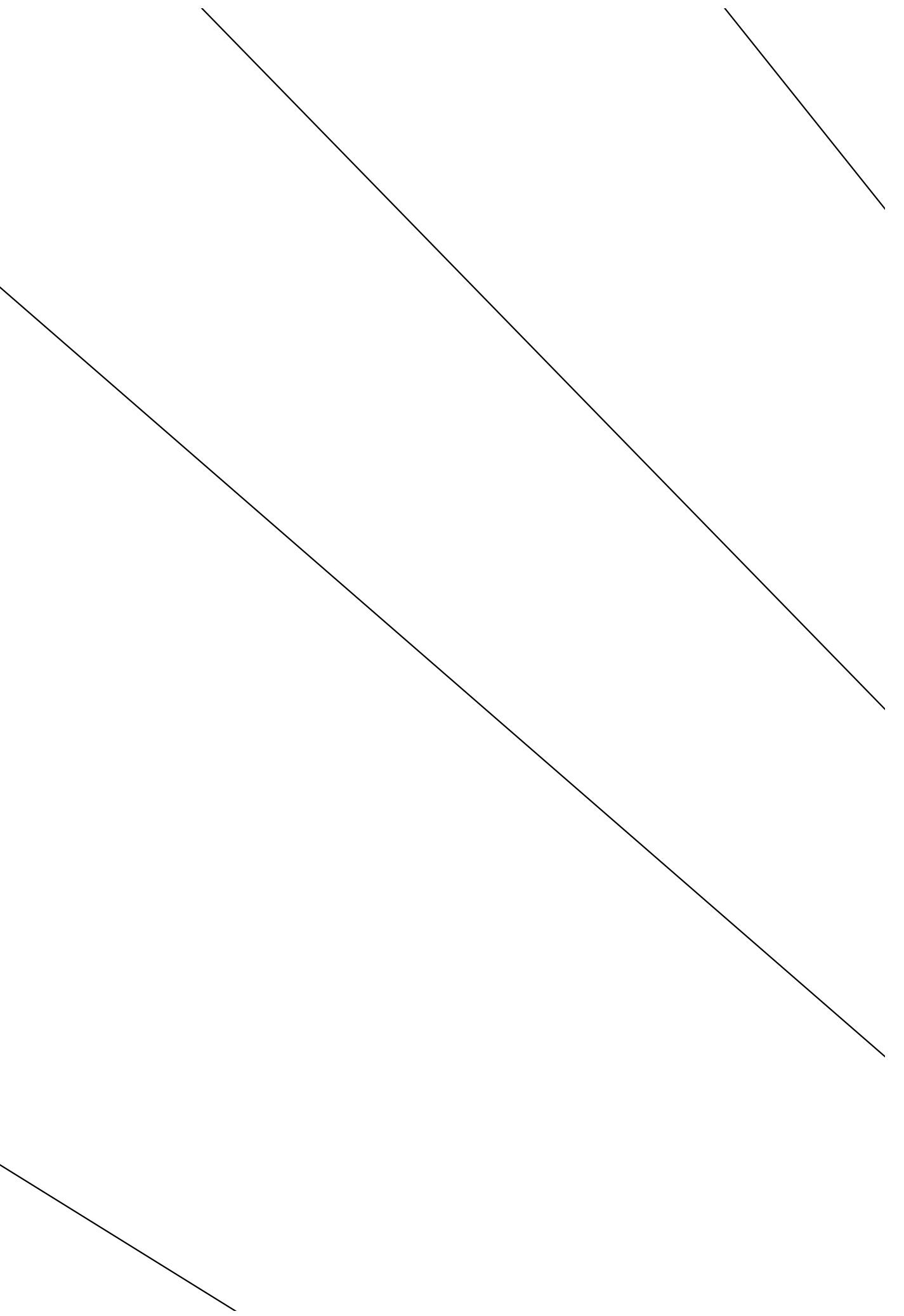
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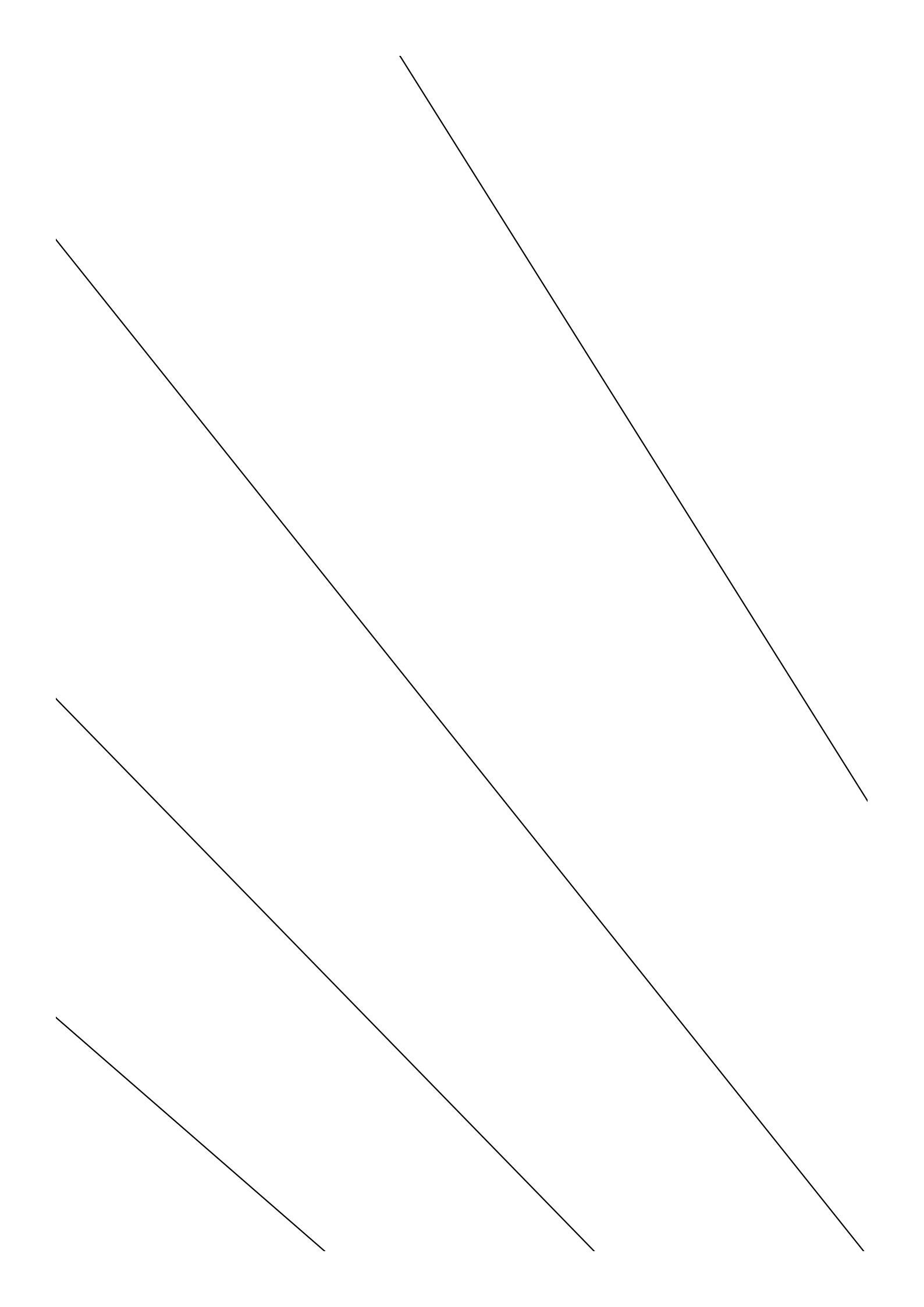


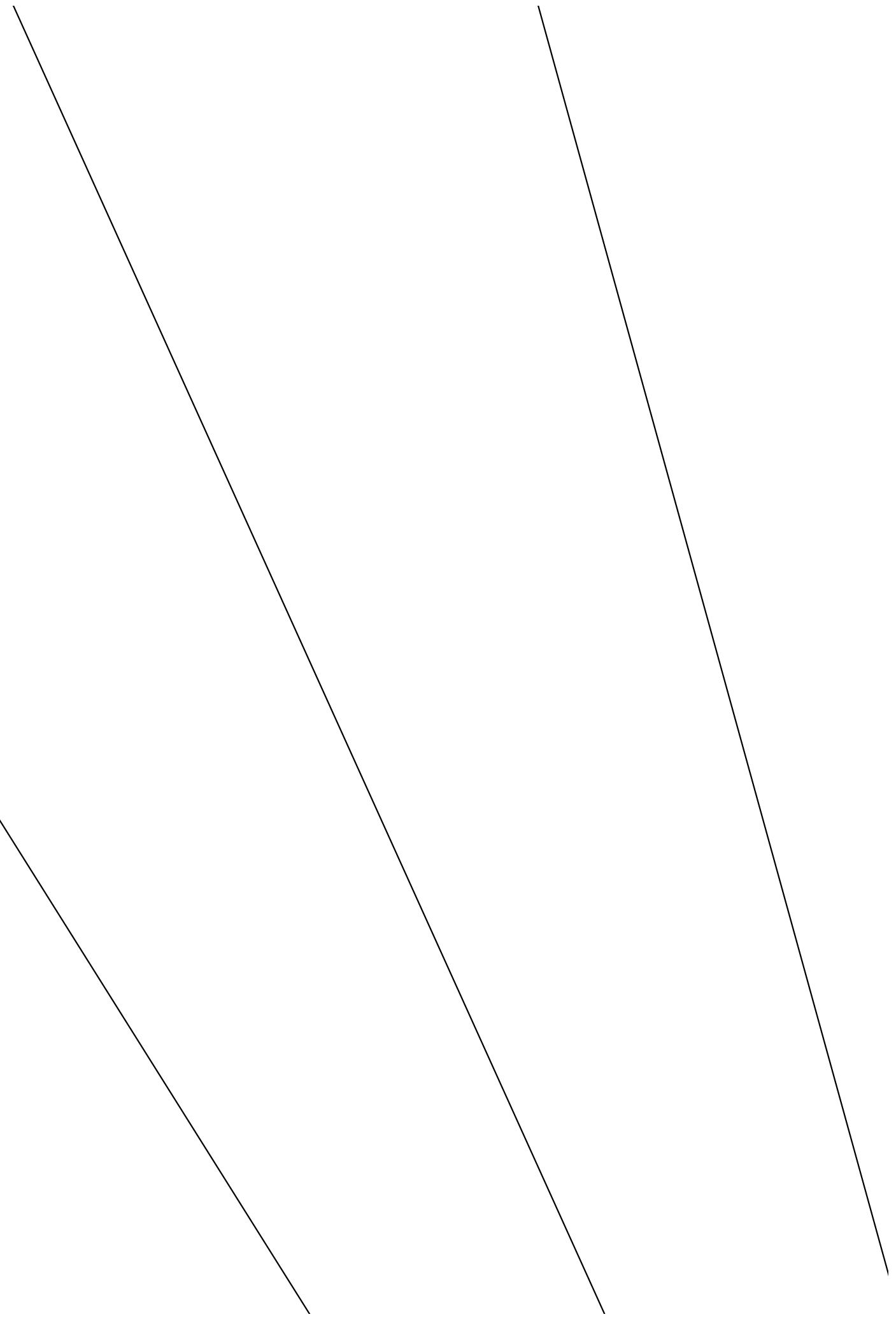


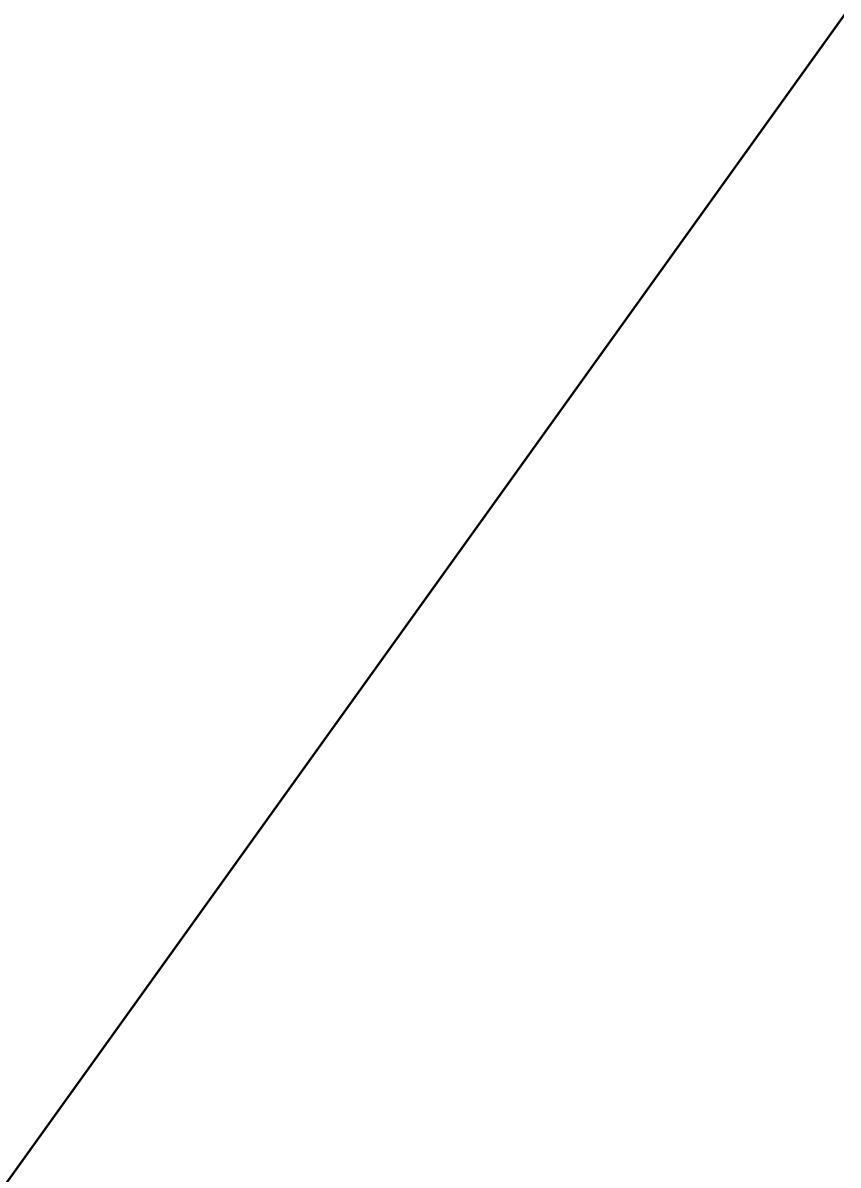


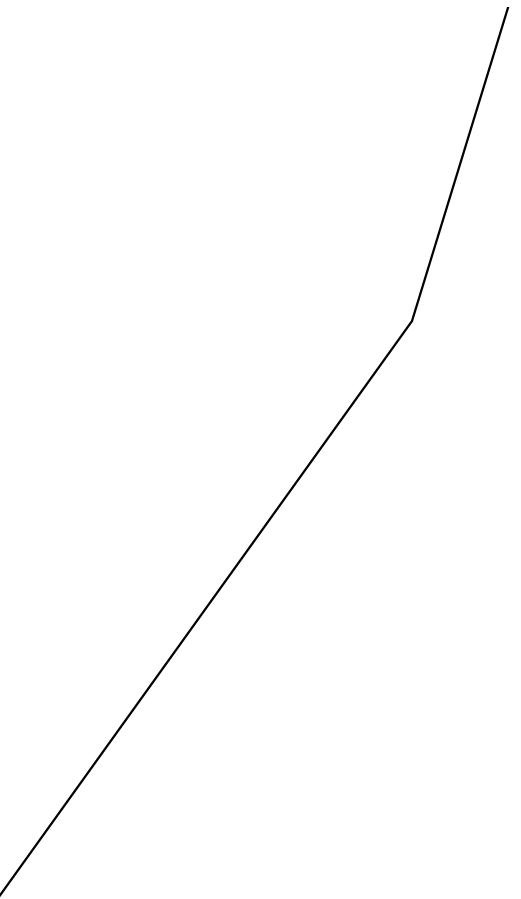


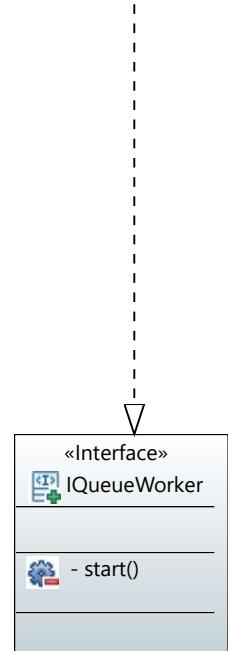




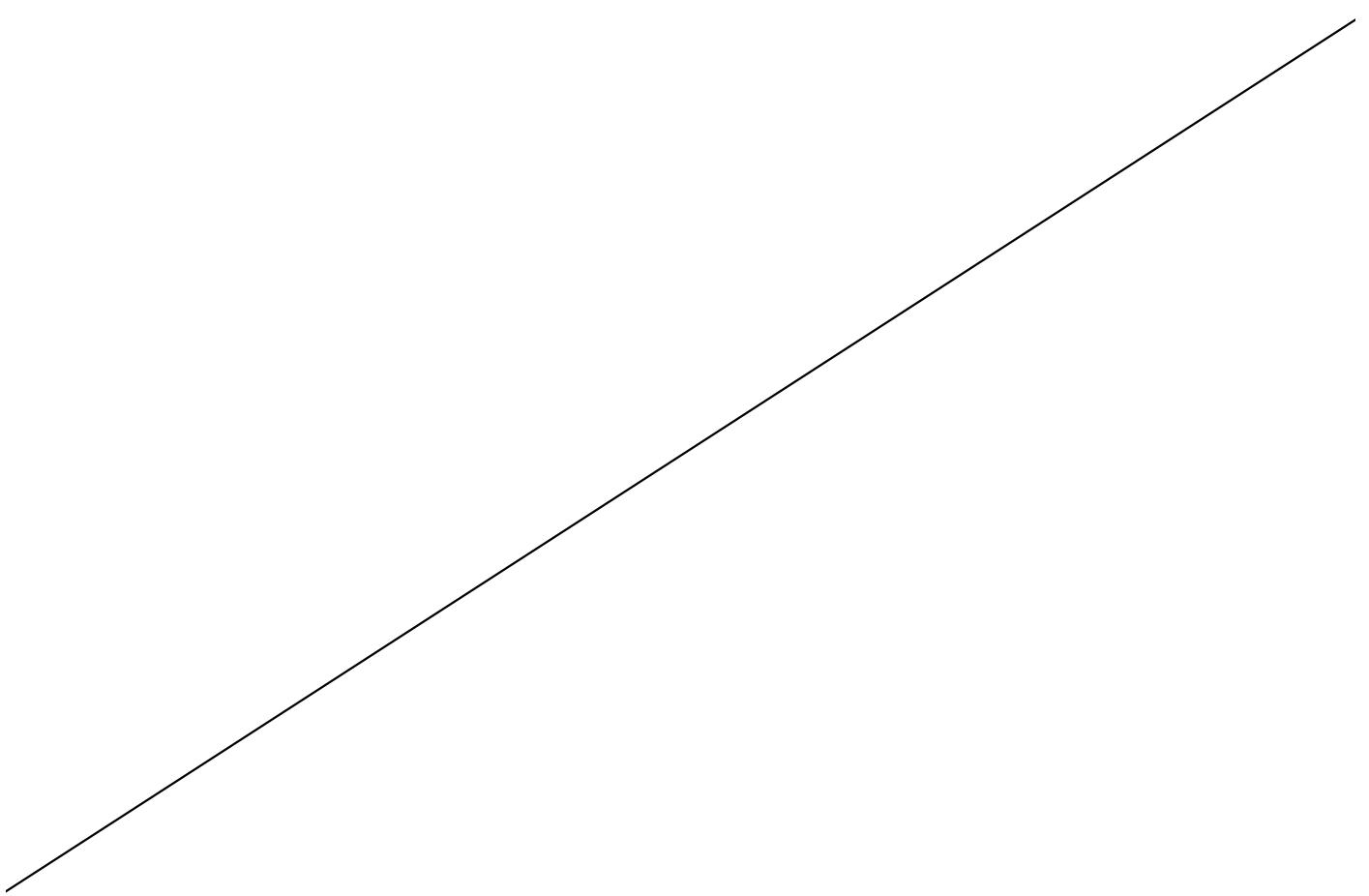


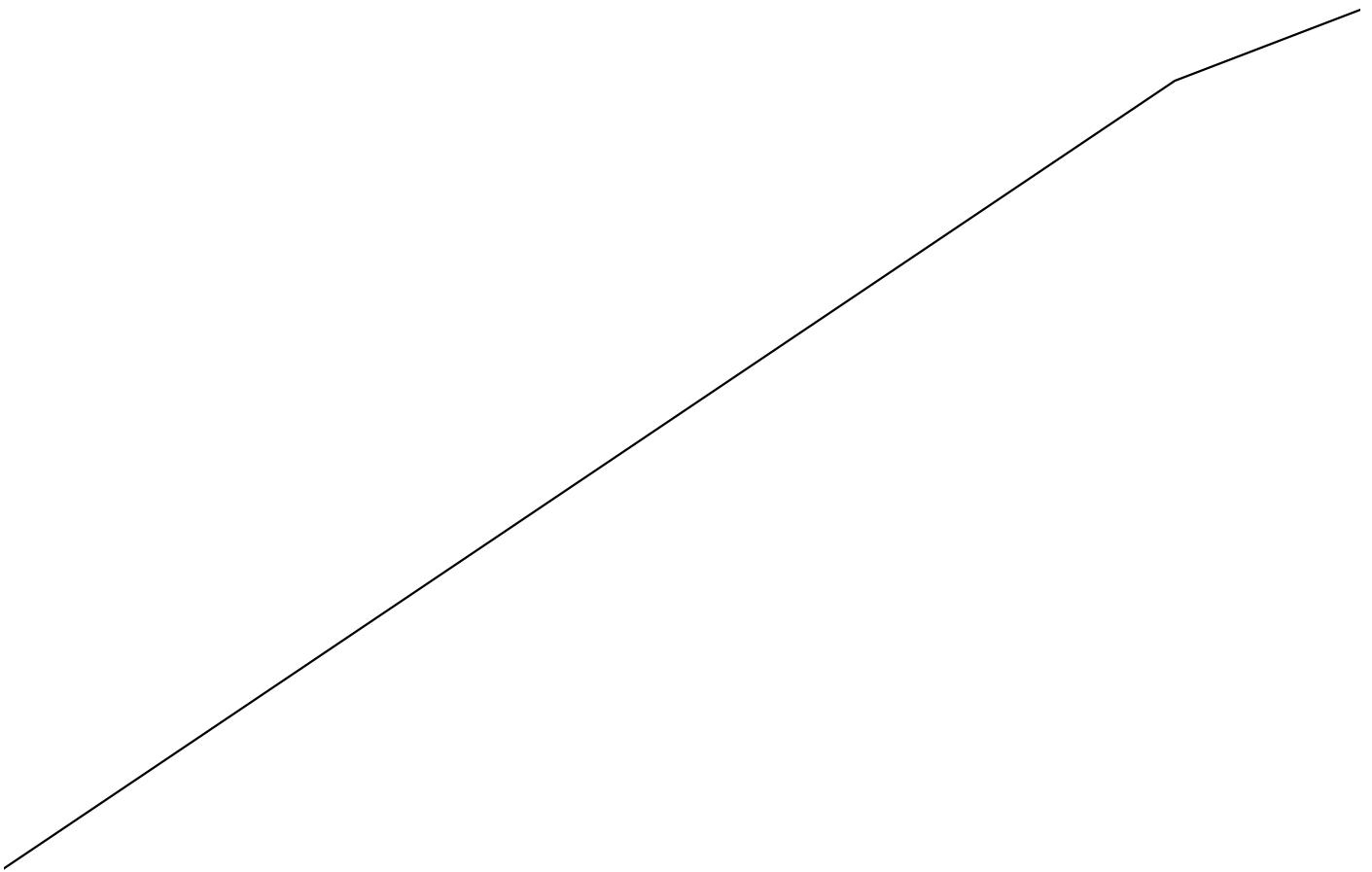


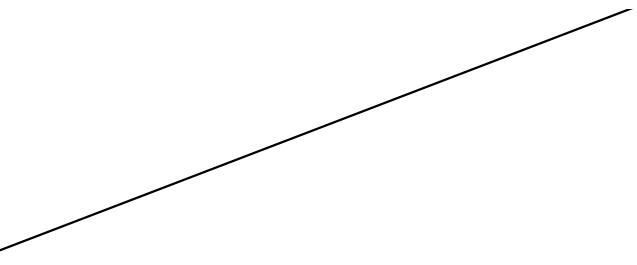




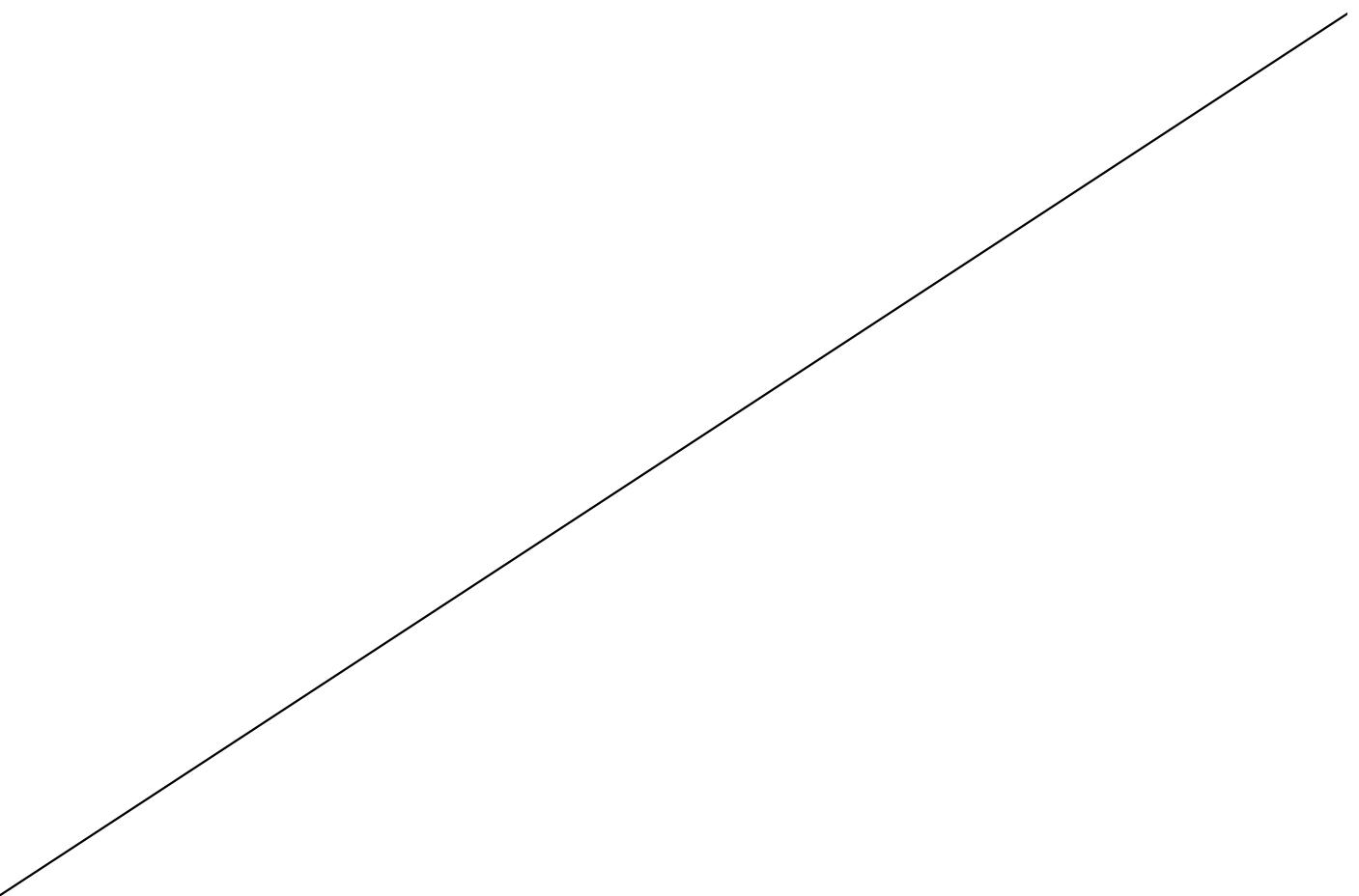


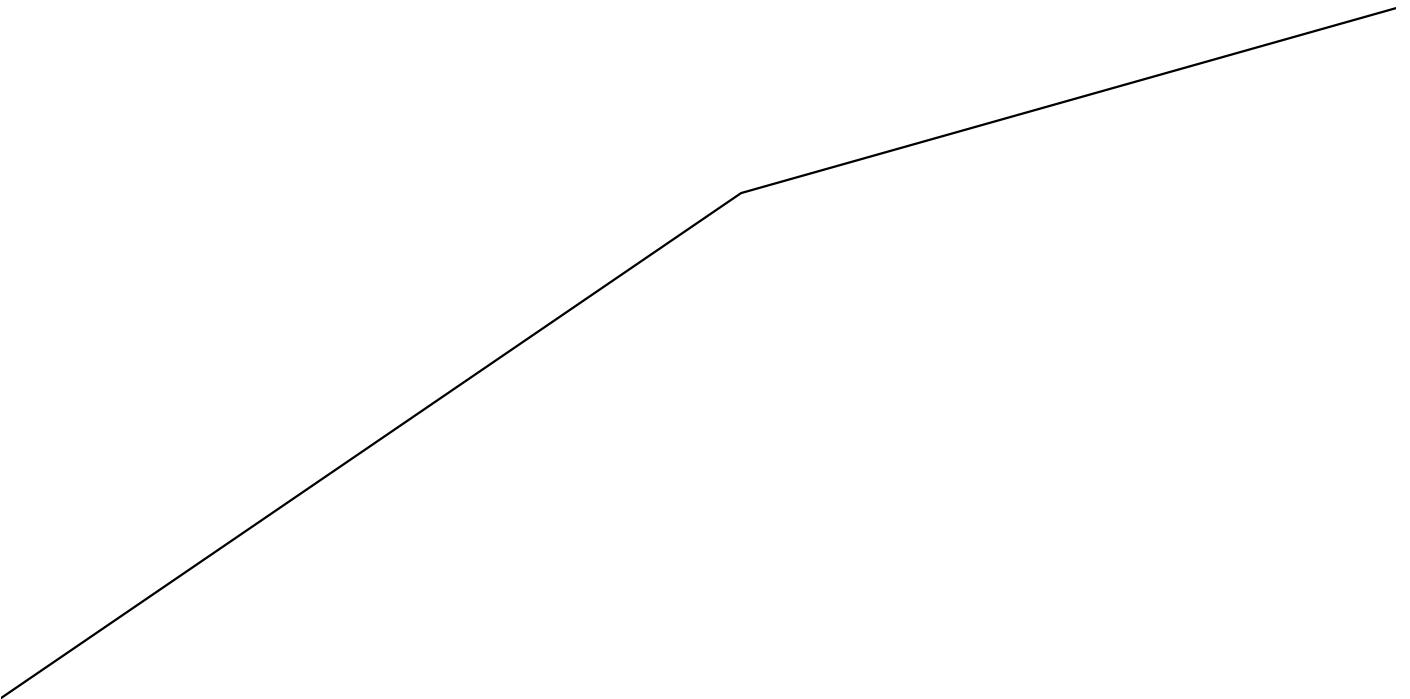


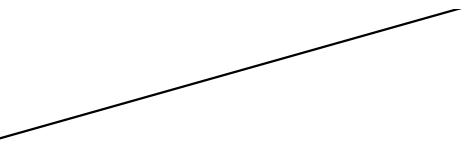


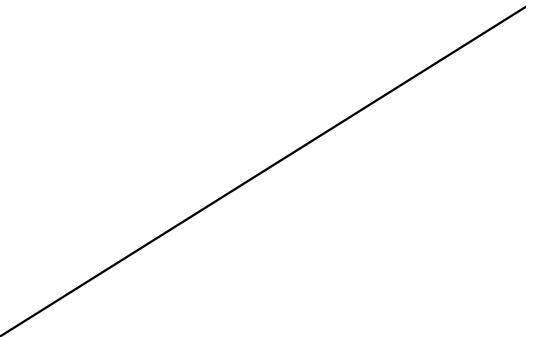


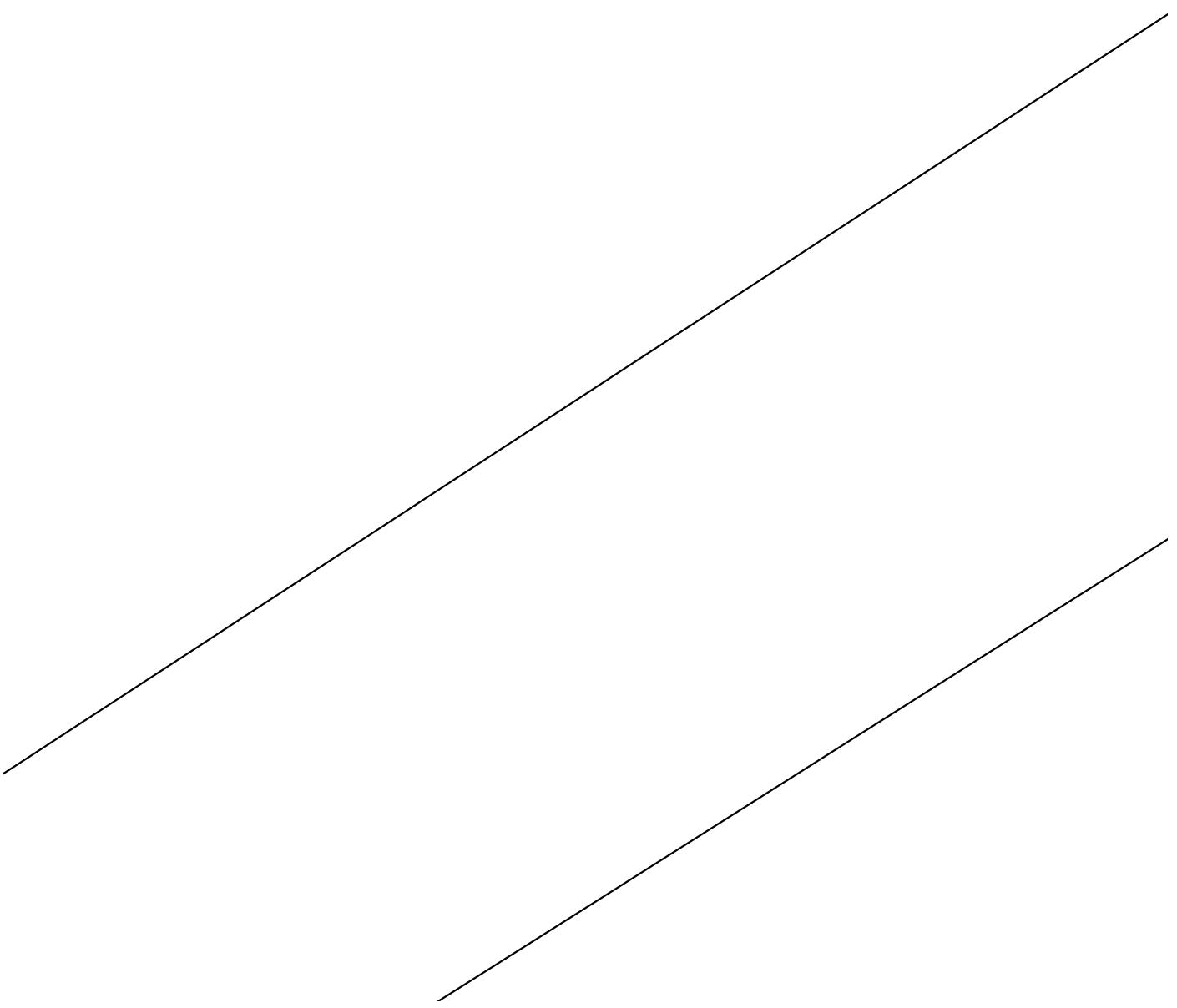






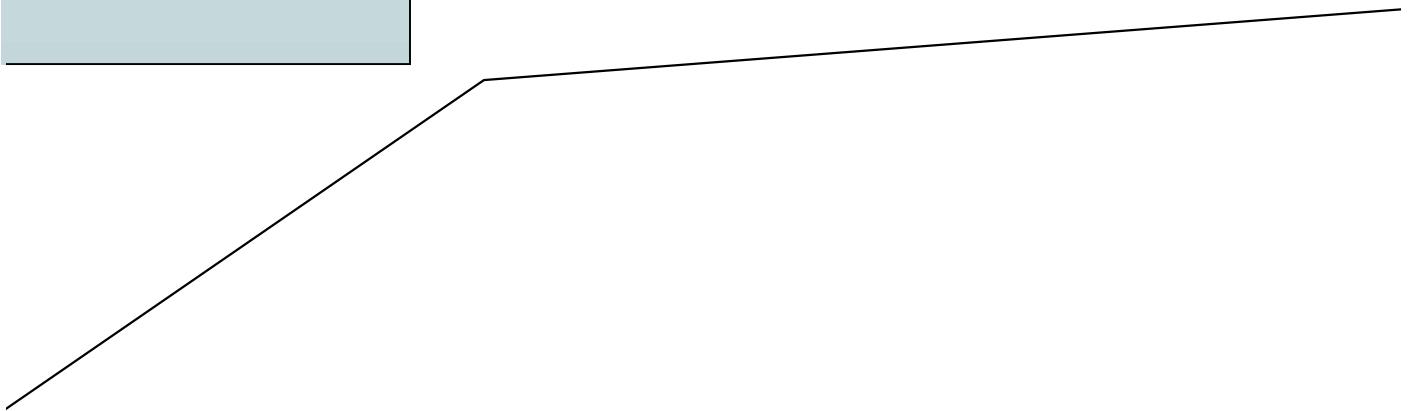


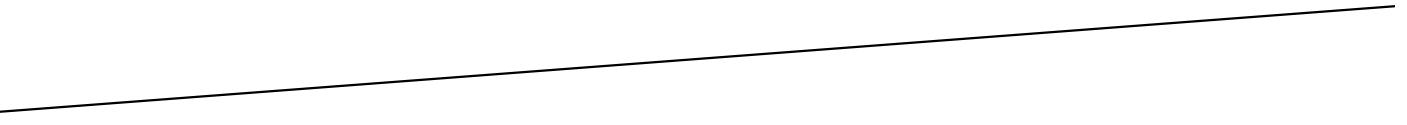




```
getWriterLogs  
getName  
getDescription  
setEnvironment  
getEnvironment  
toString  
verify  
trace  
trace
```

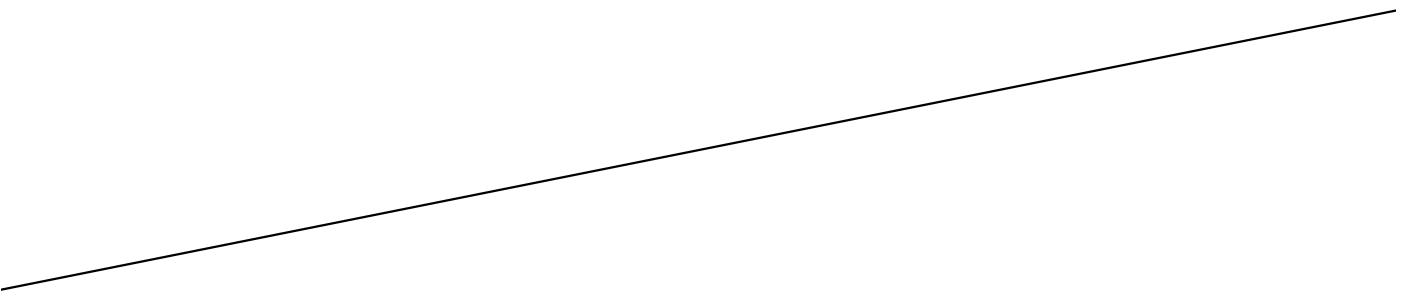


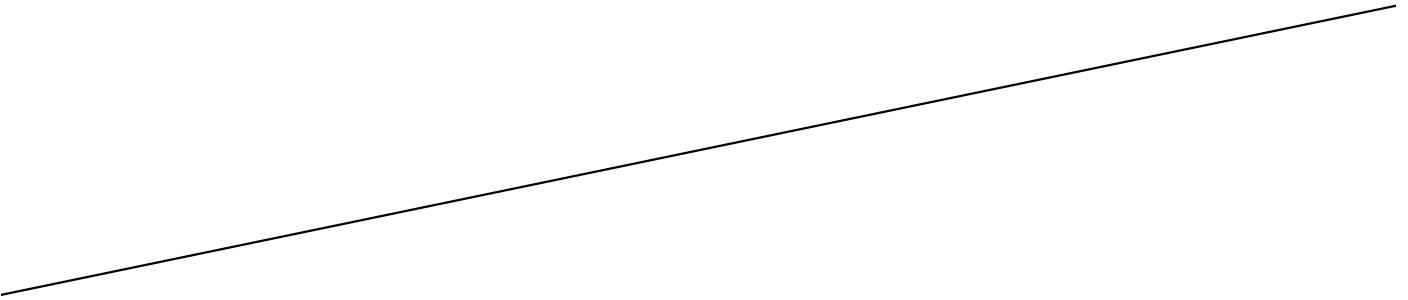


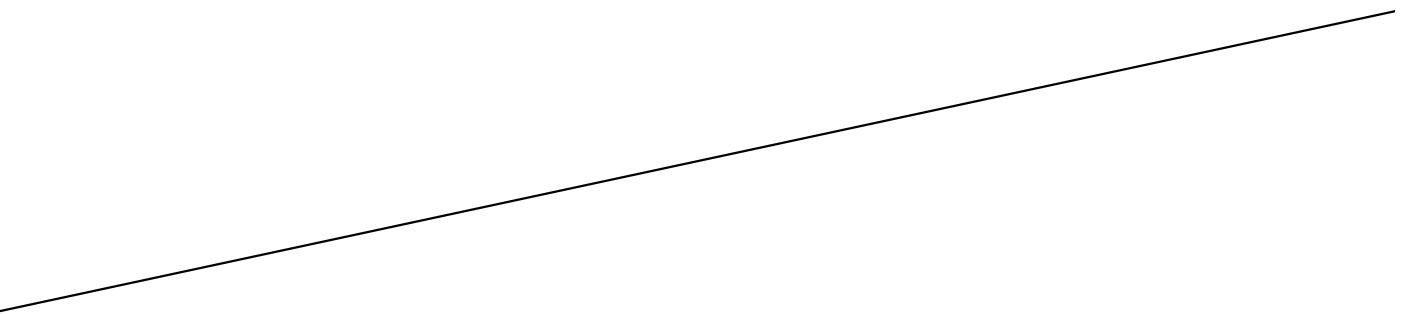


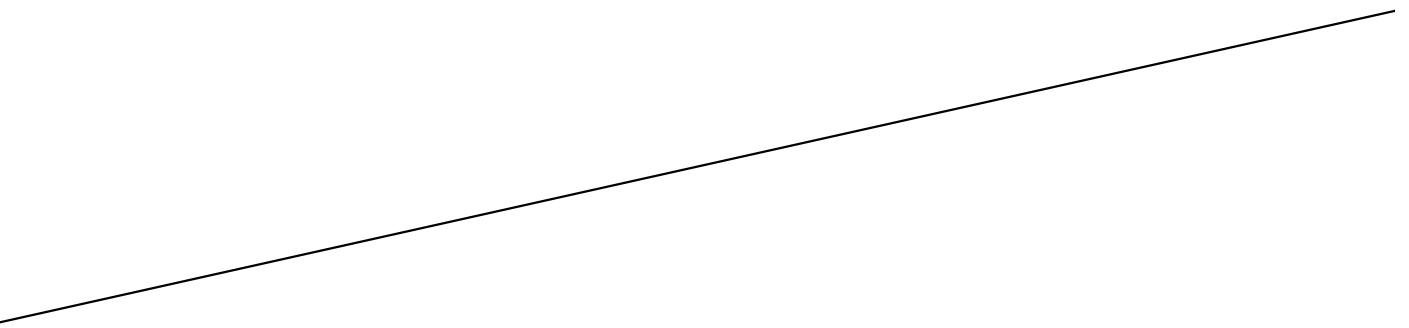


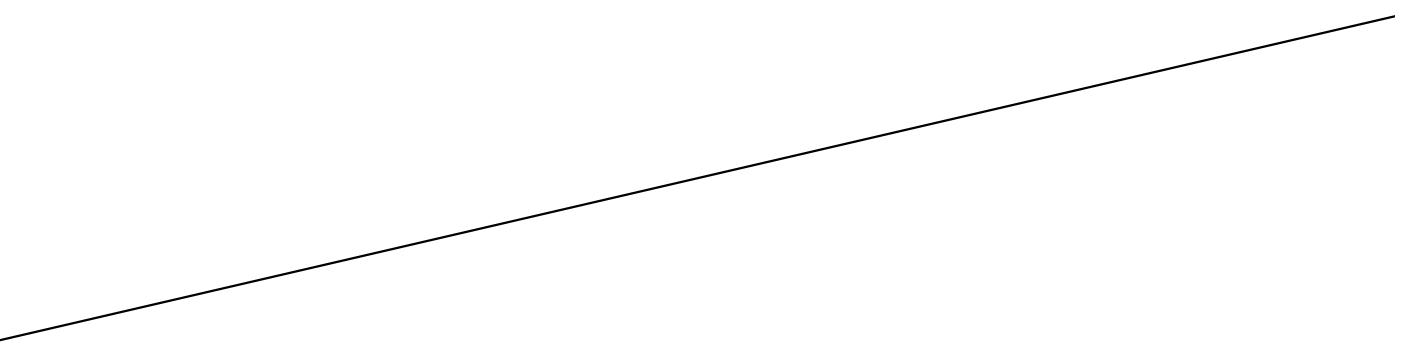


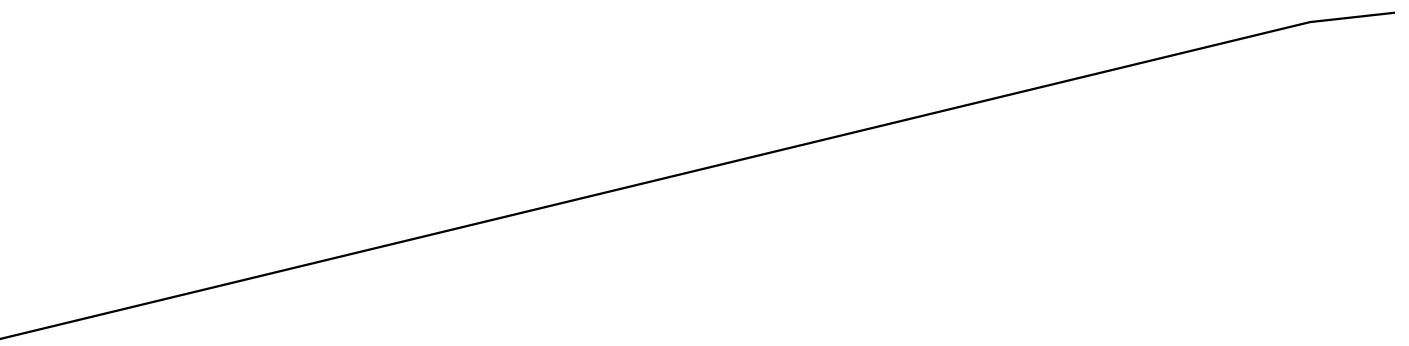


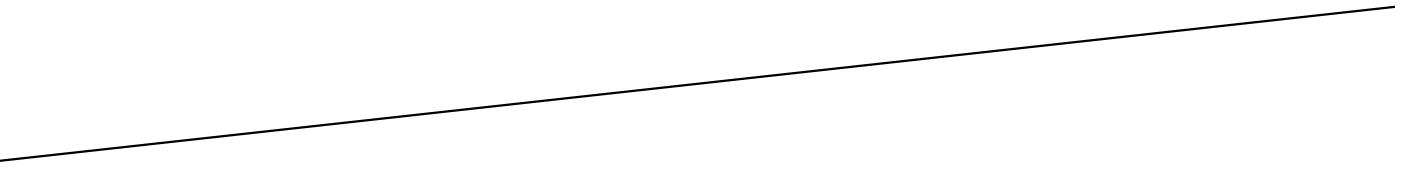


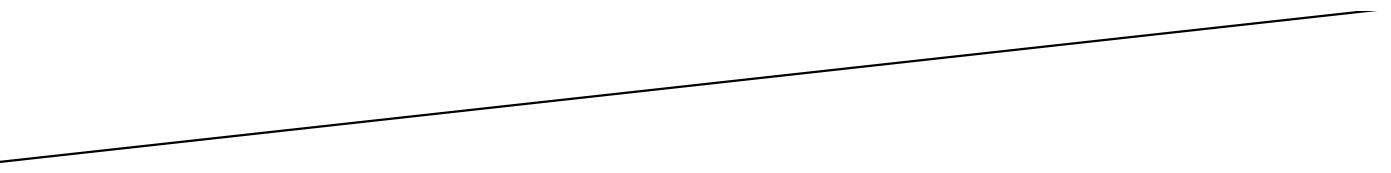


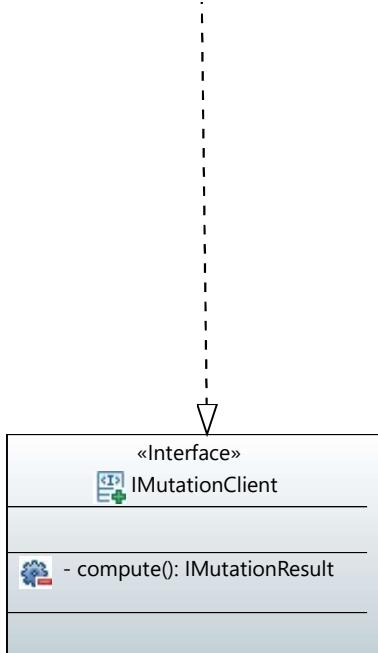


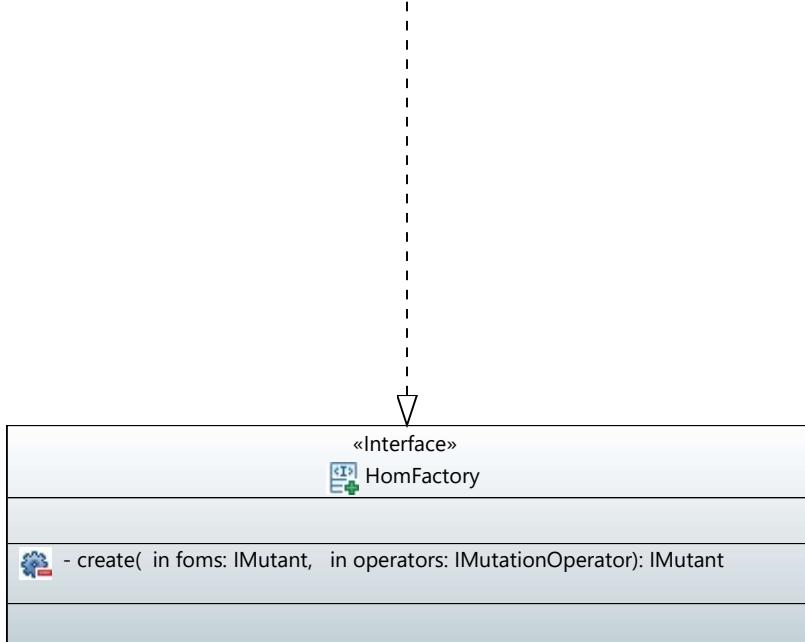


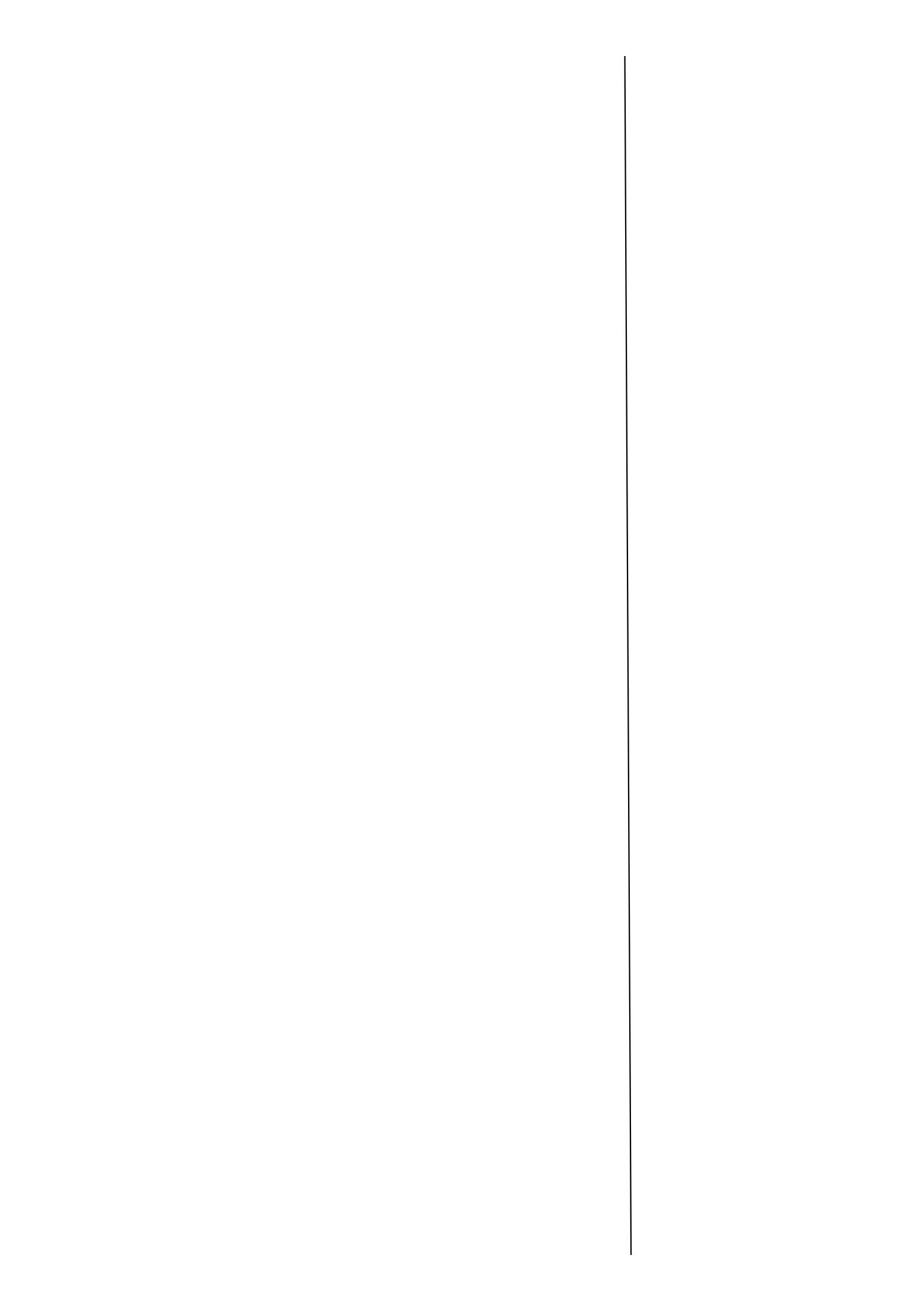


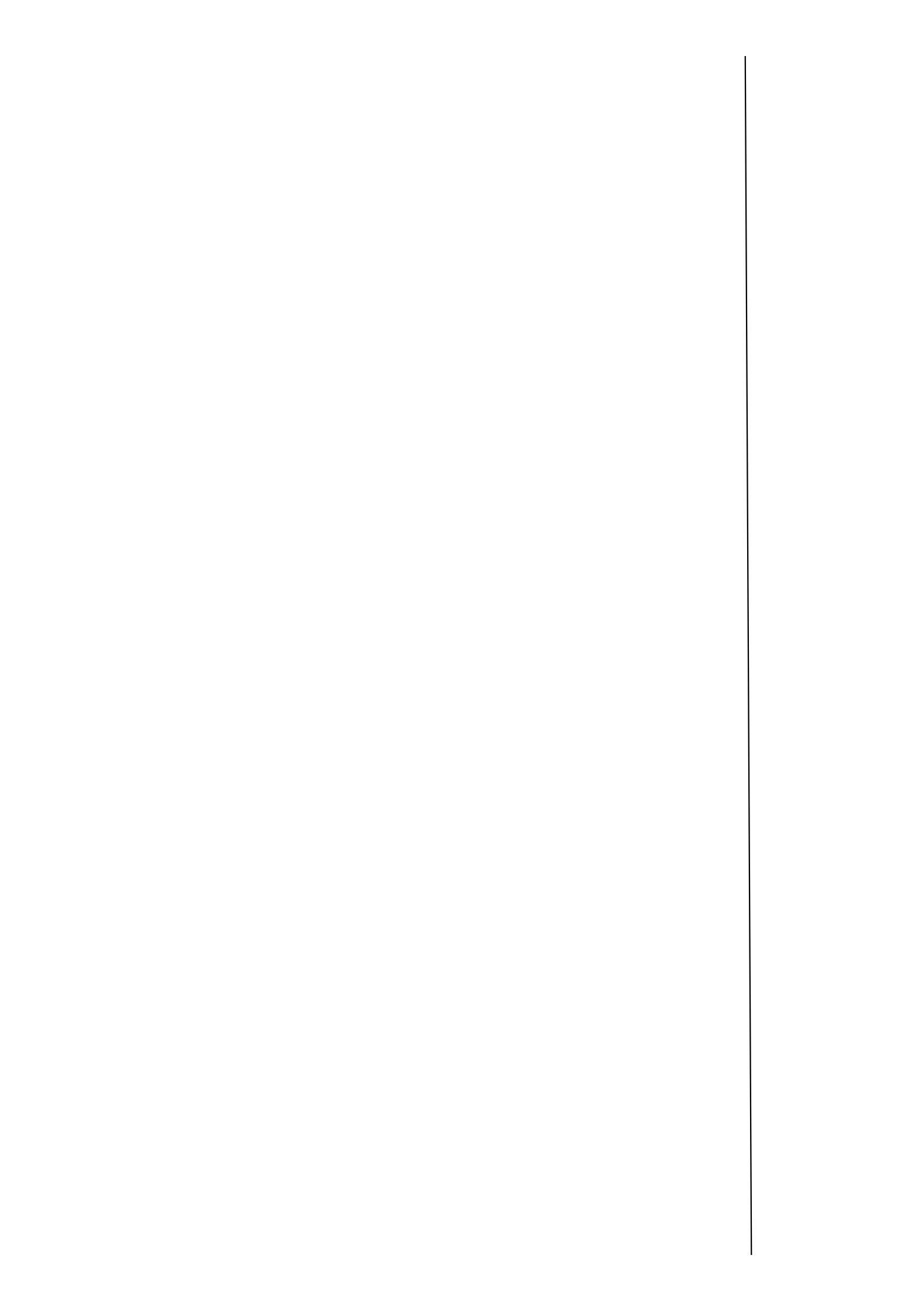




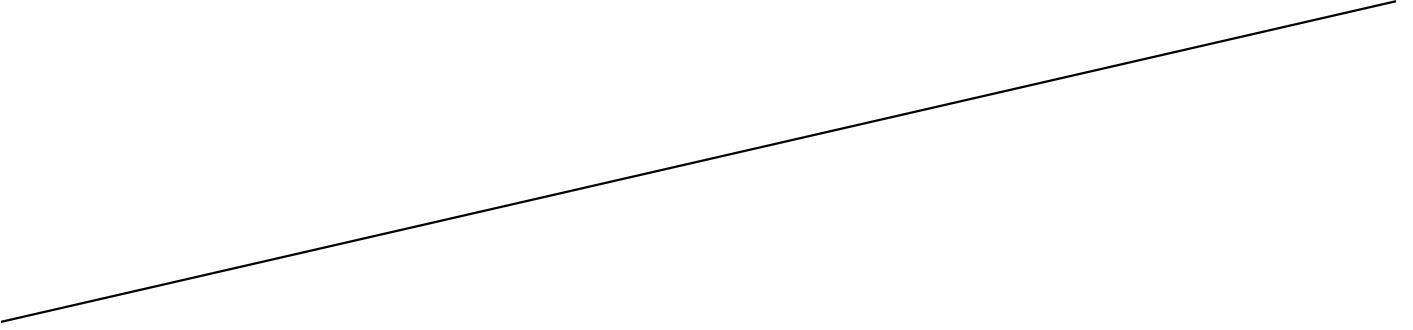


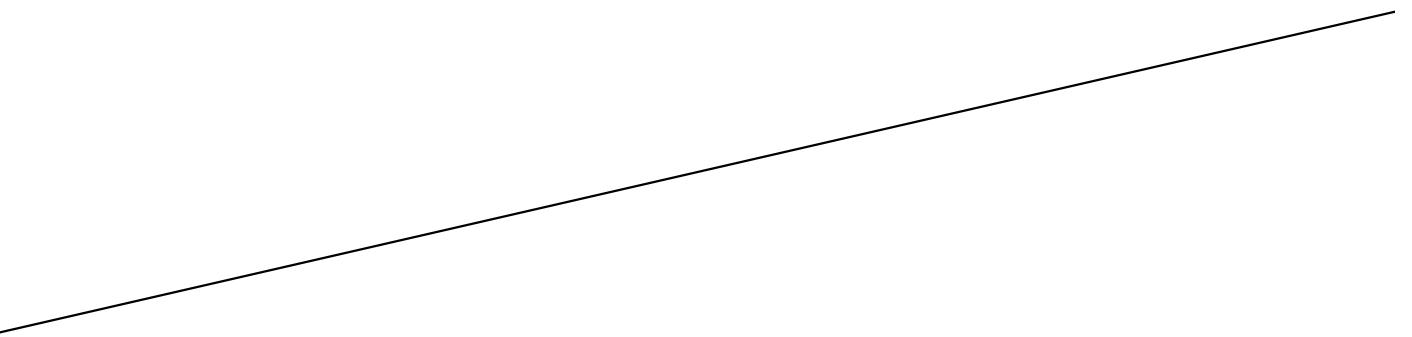


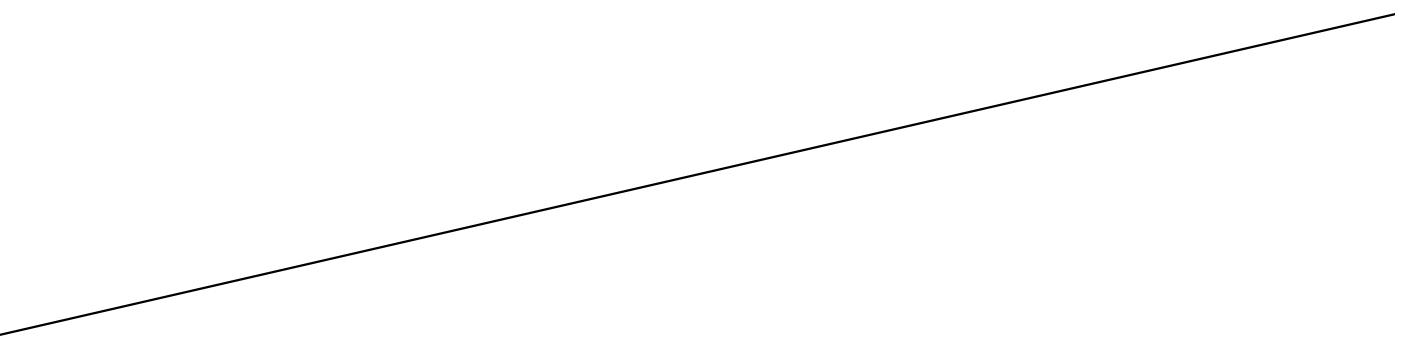


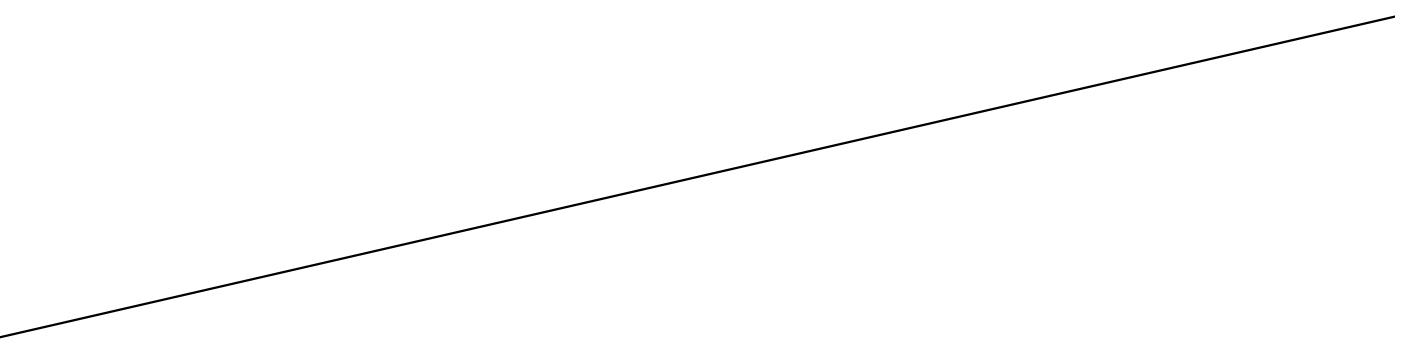


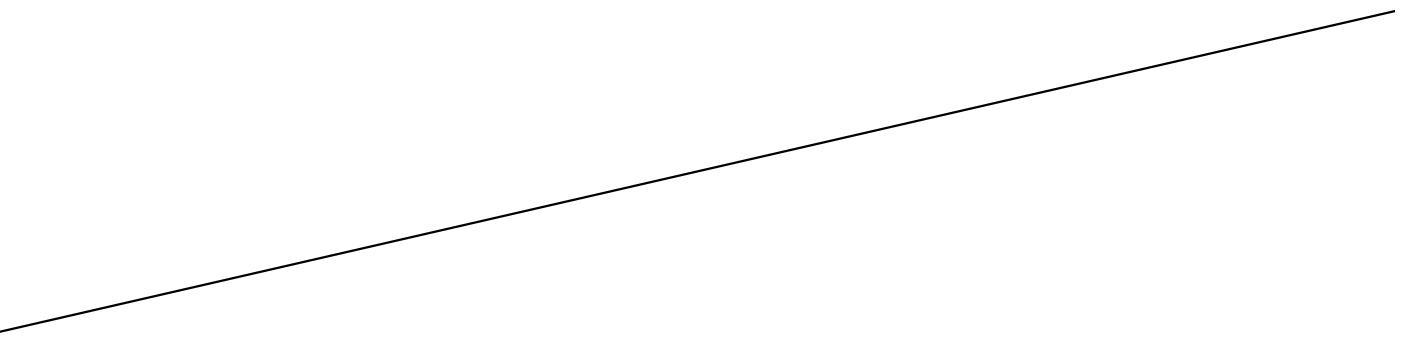


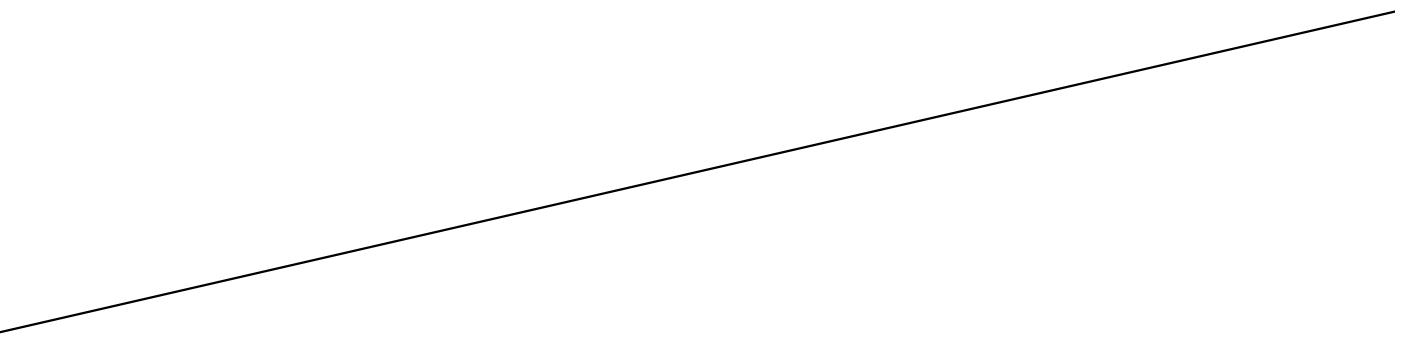




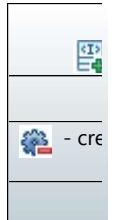




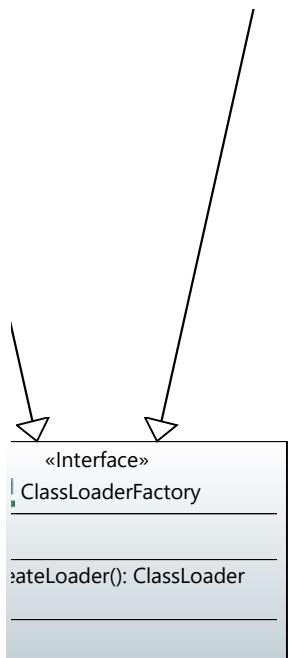


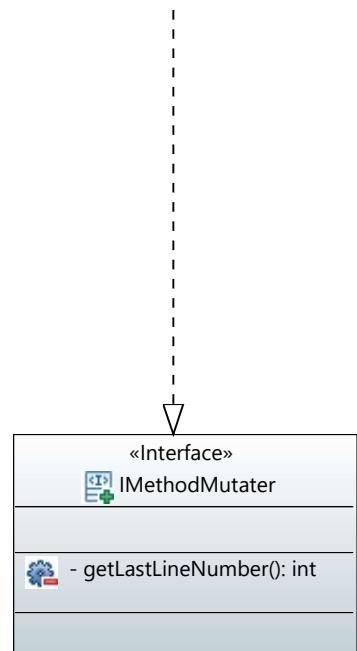


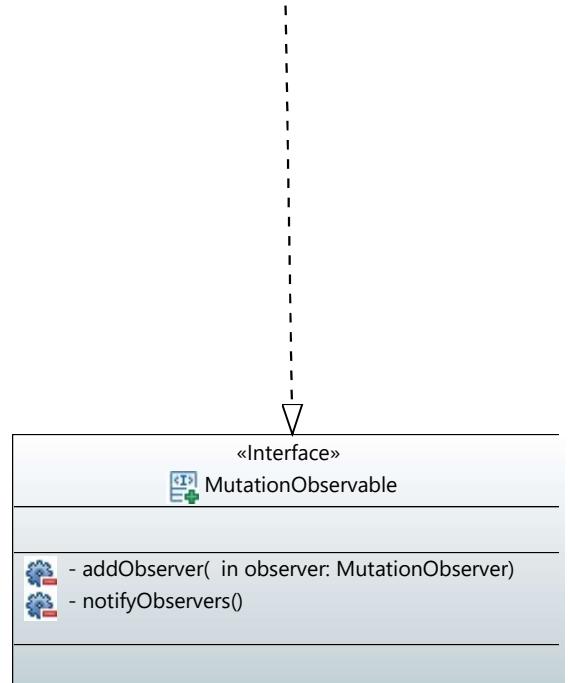
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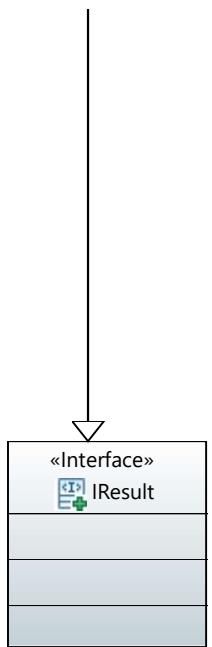
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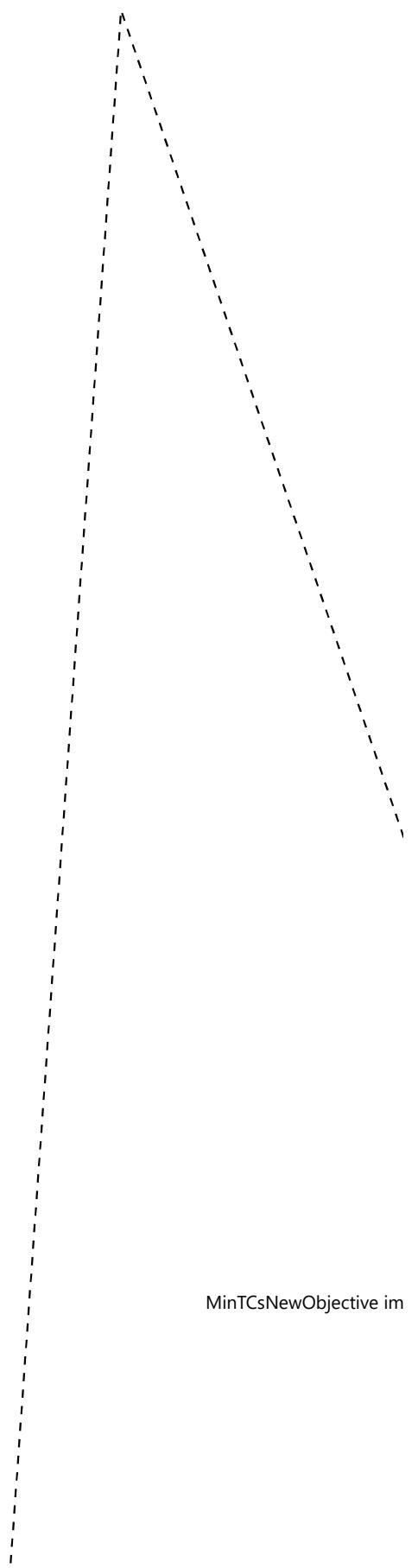






]





MinTCsNewObjective im

plements ObjectiveCalculator

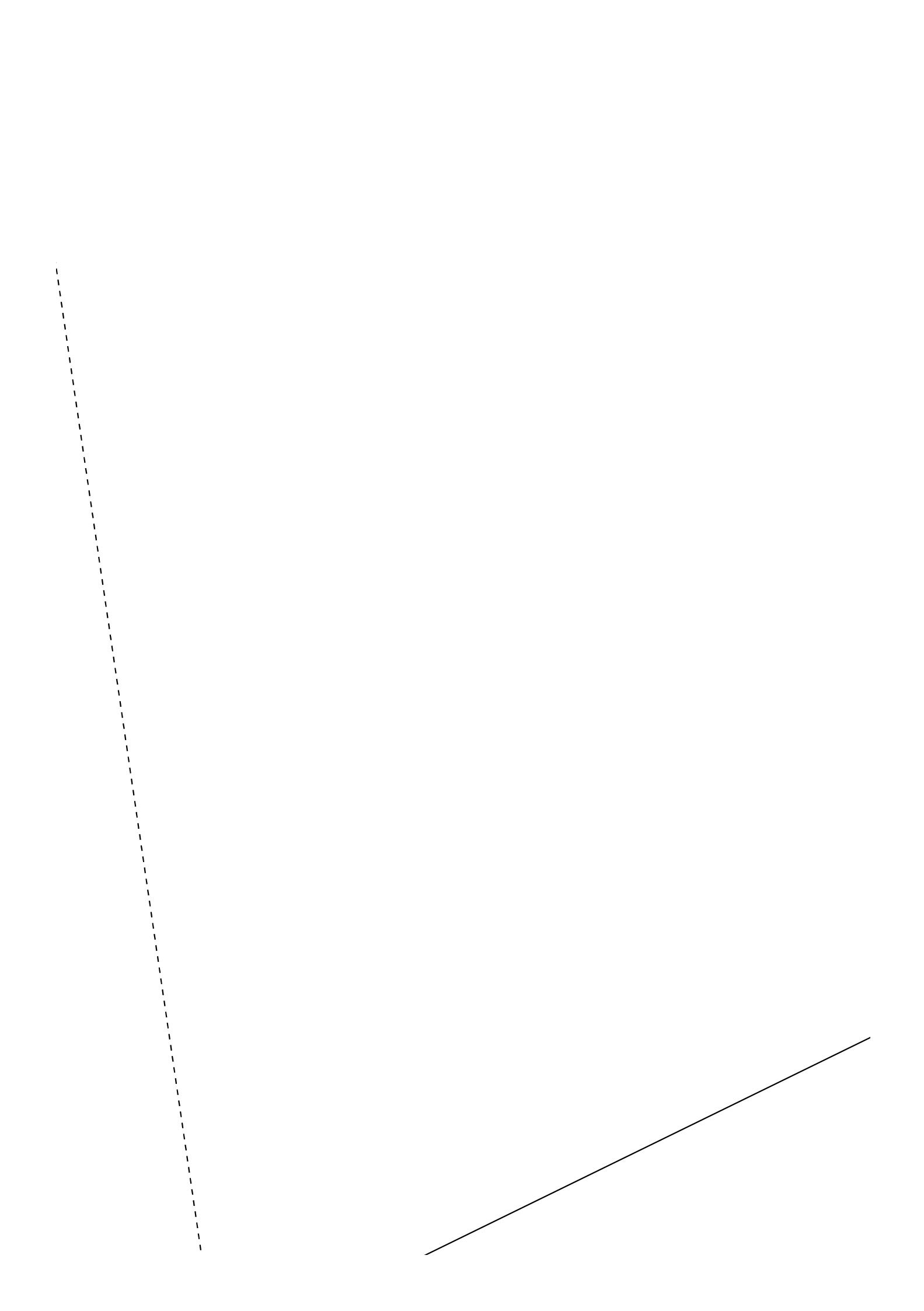
Min[†]CsSSHOMObjective implements ObjectiveCalculator

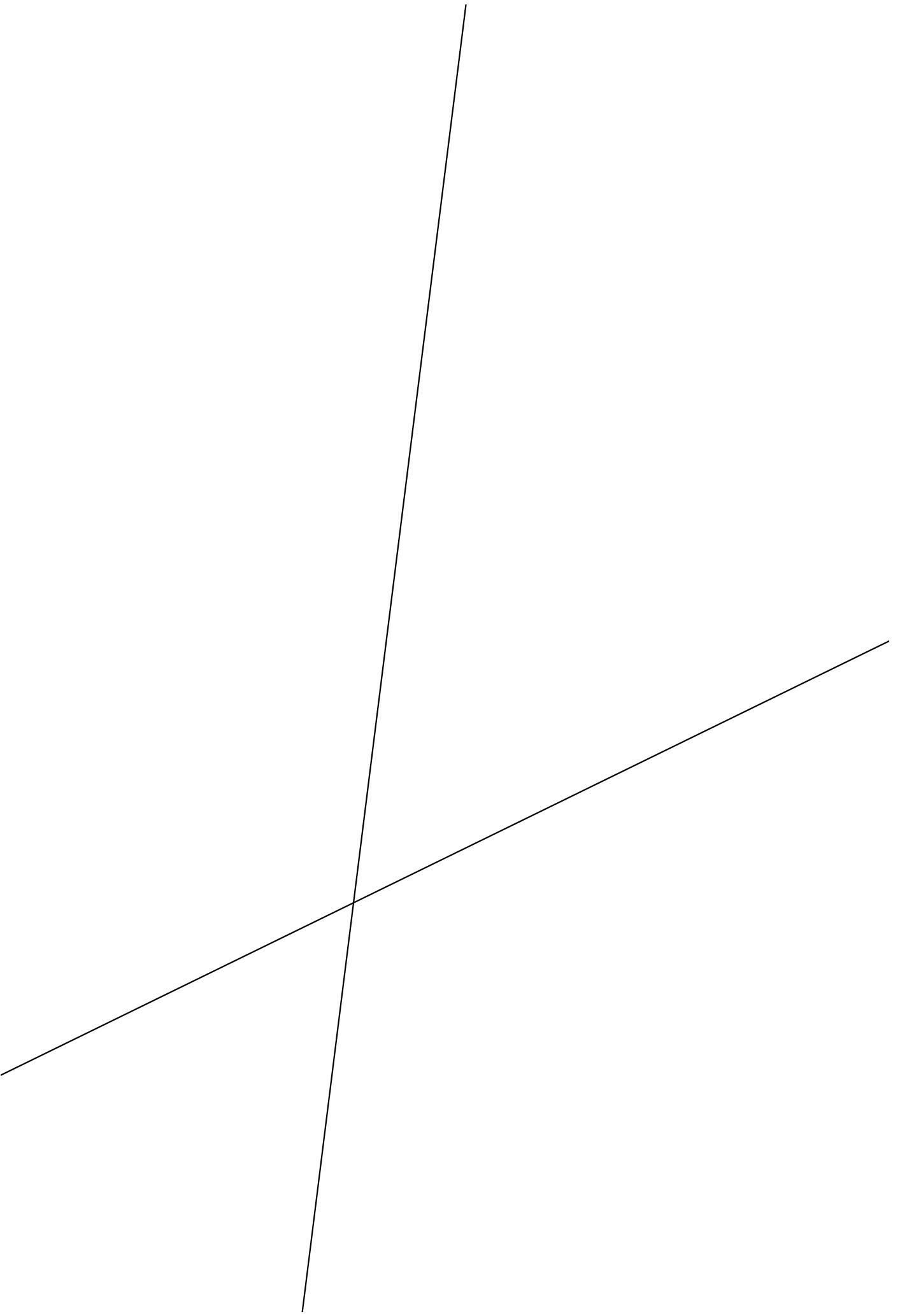
MinTCsOldObjective implements ObjectiveCalculator

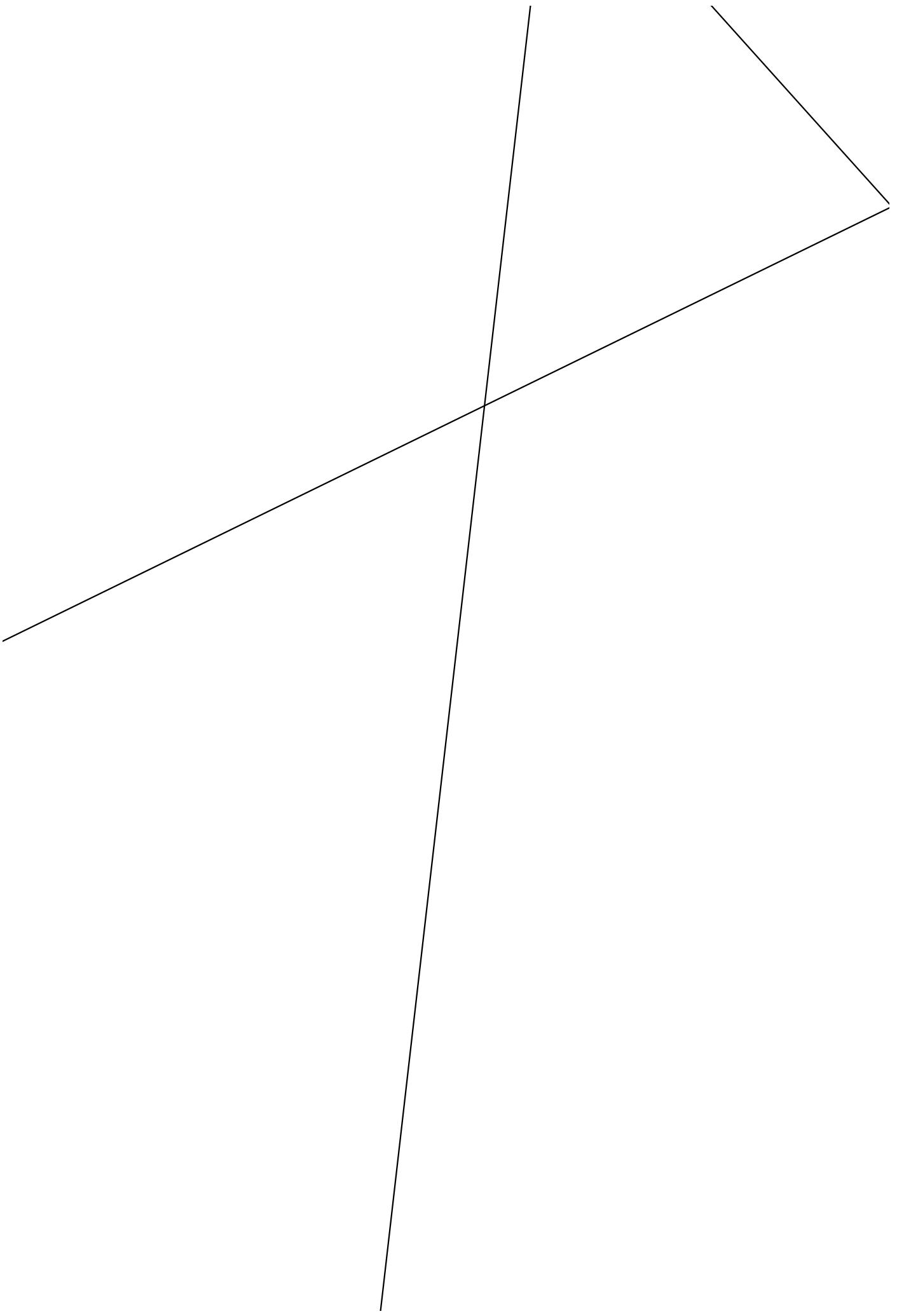
MutationOrderObjective implem

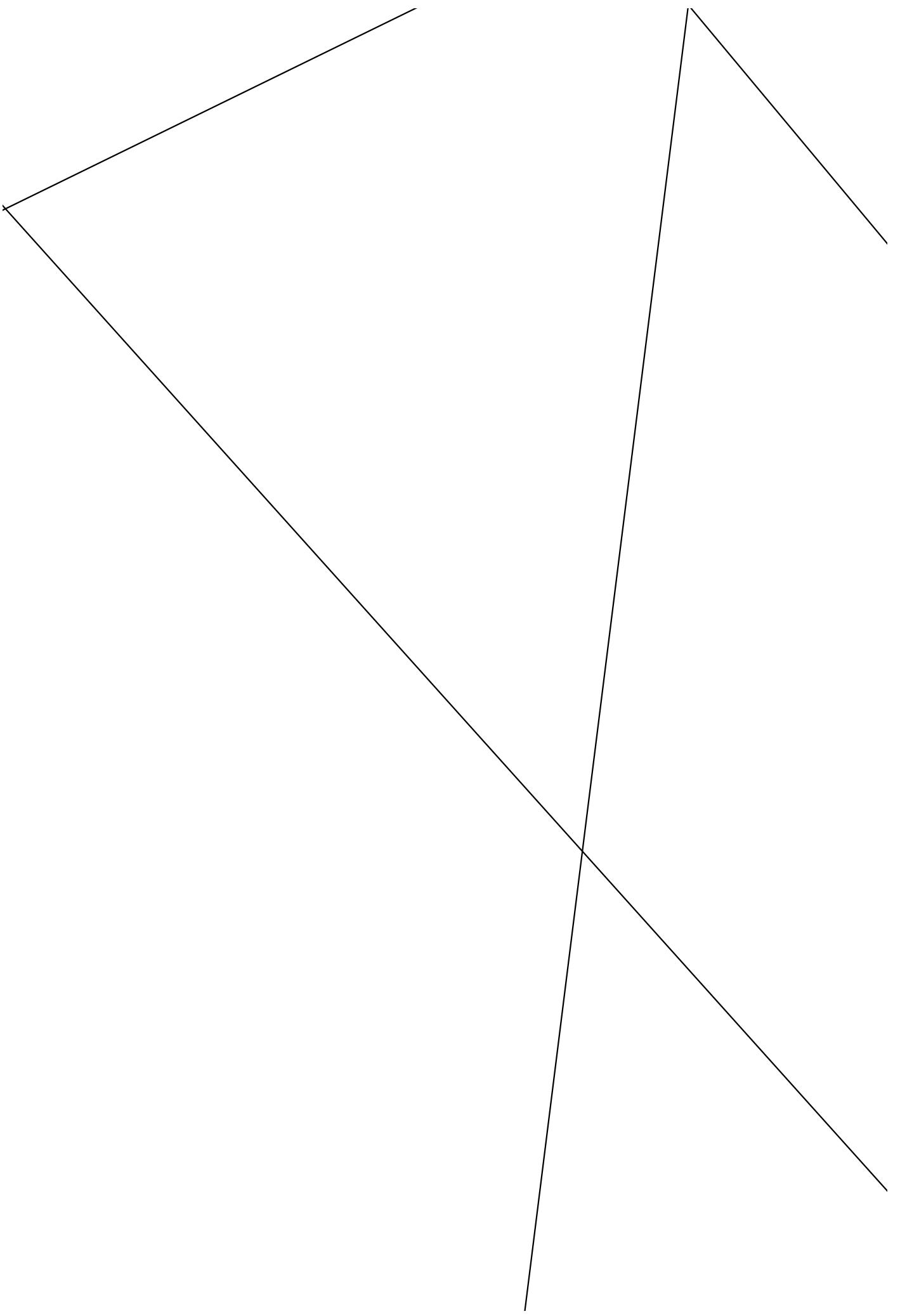
ents ObjectiveCalculator

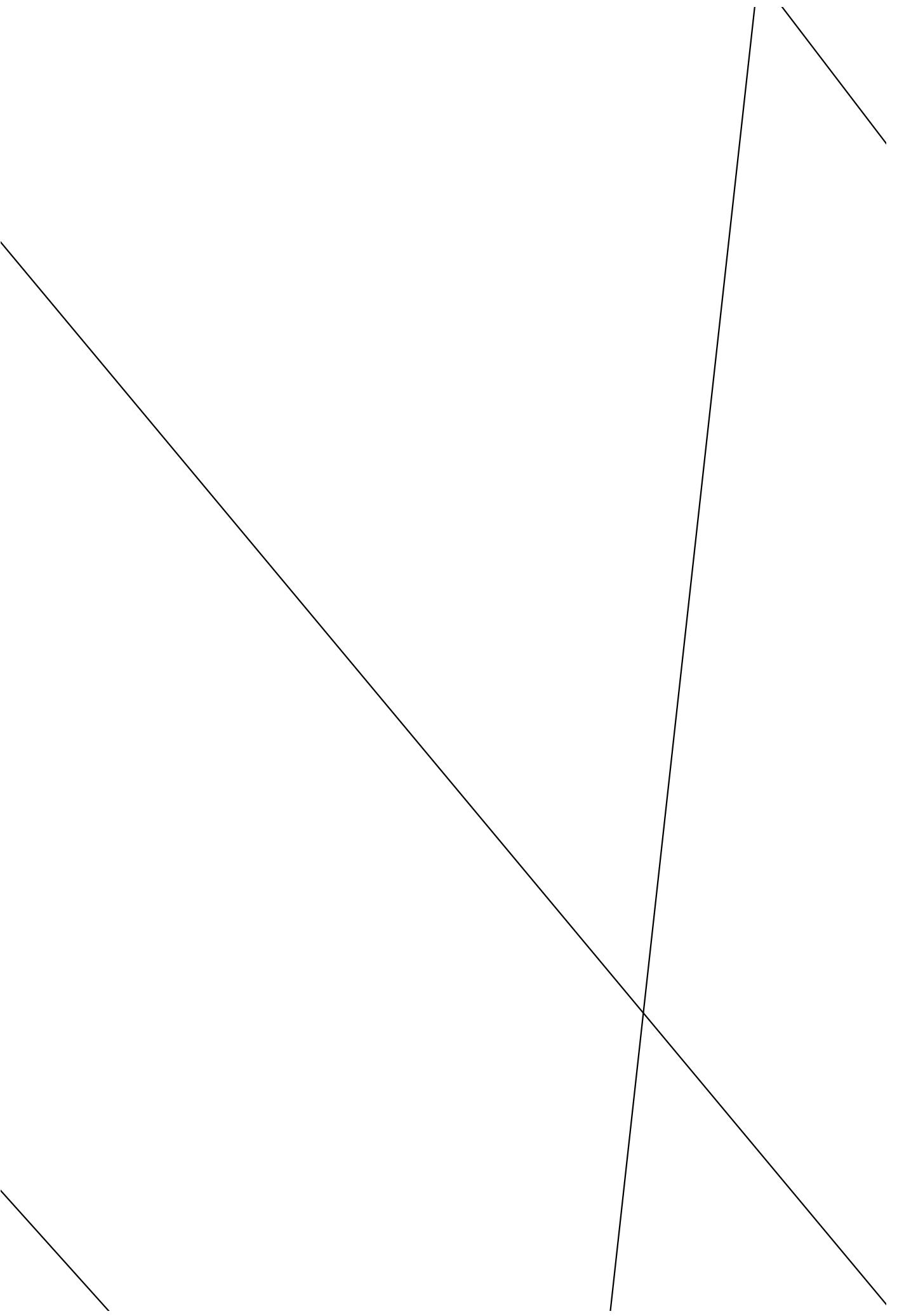
MaxOperatorDiversityObjective implements ObjectiveCalculator

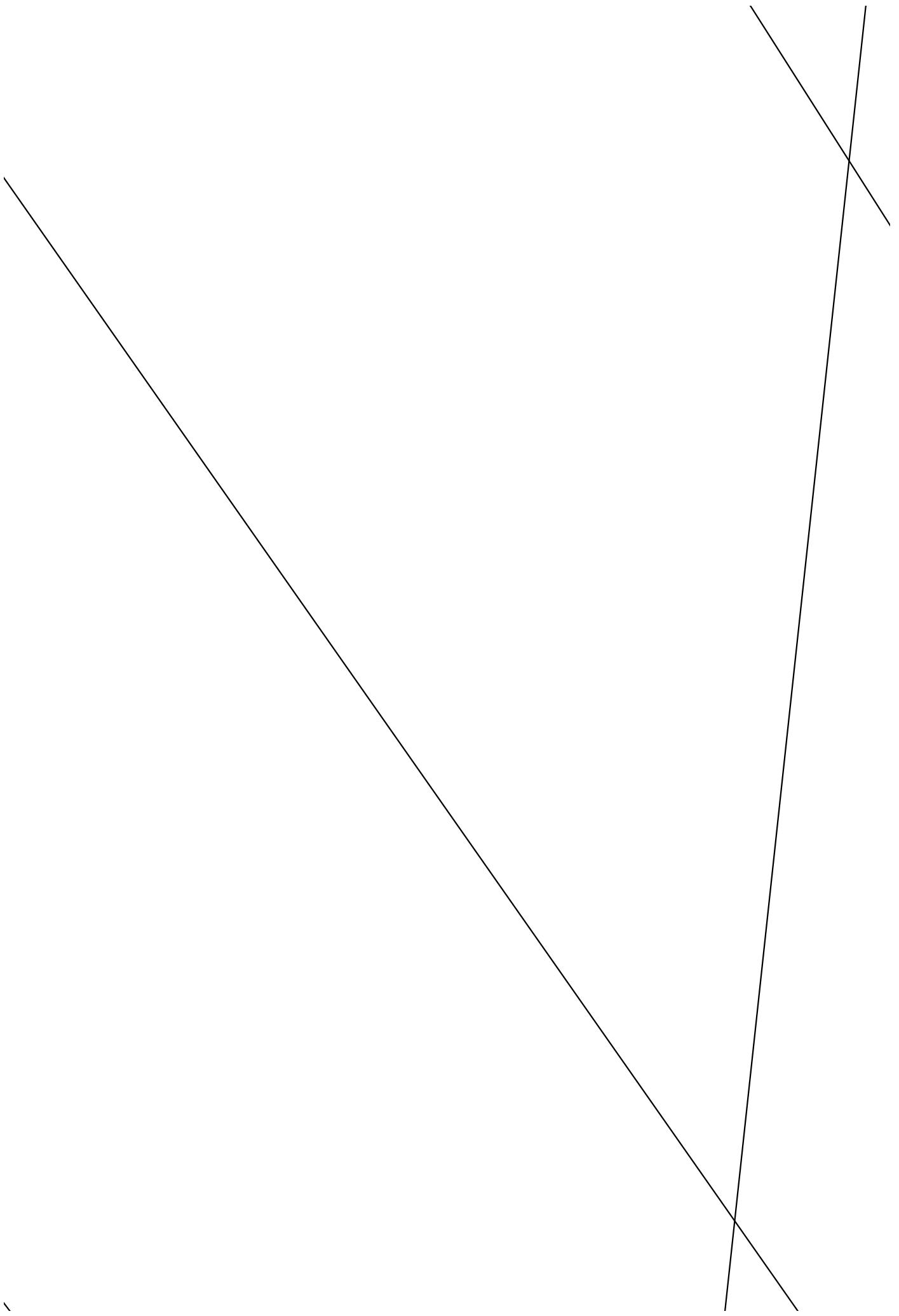


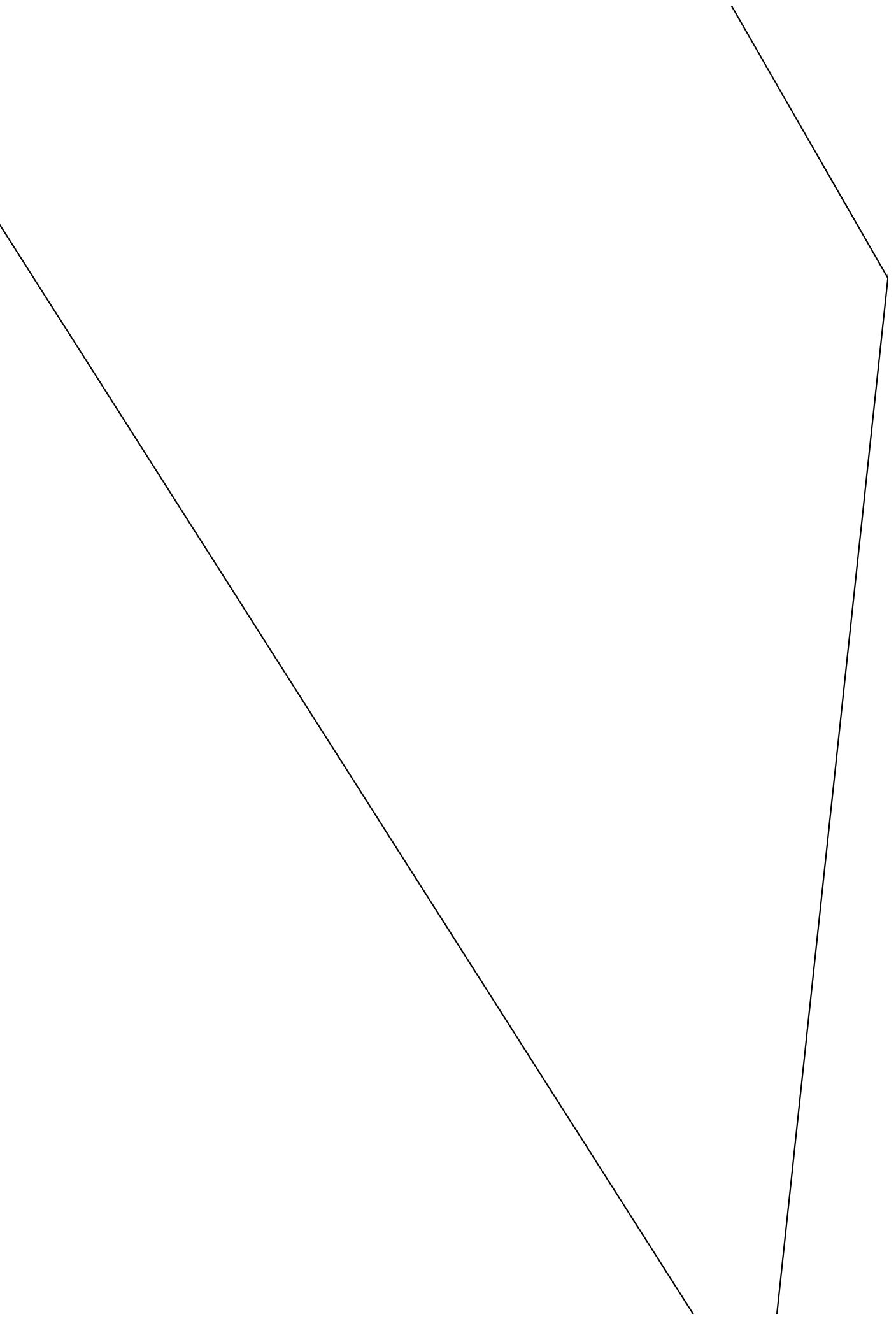


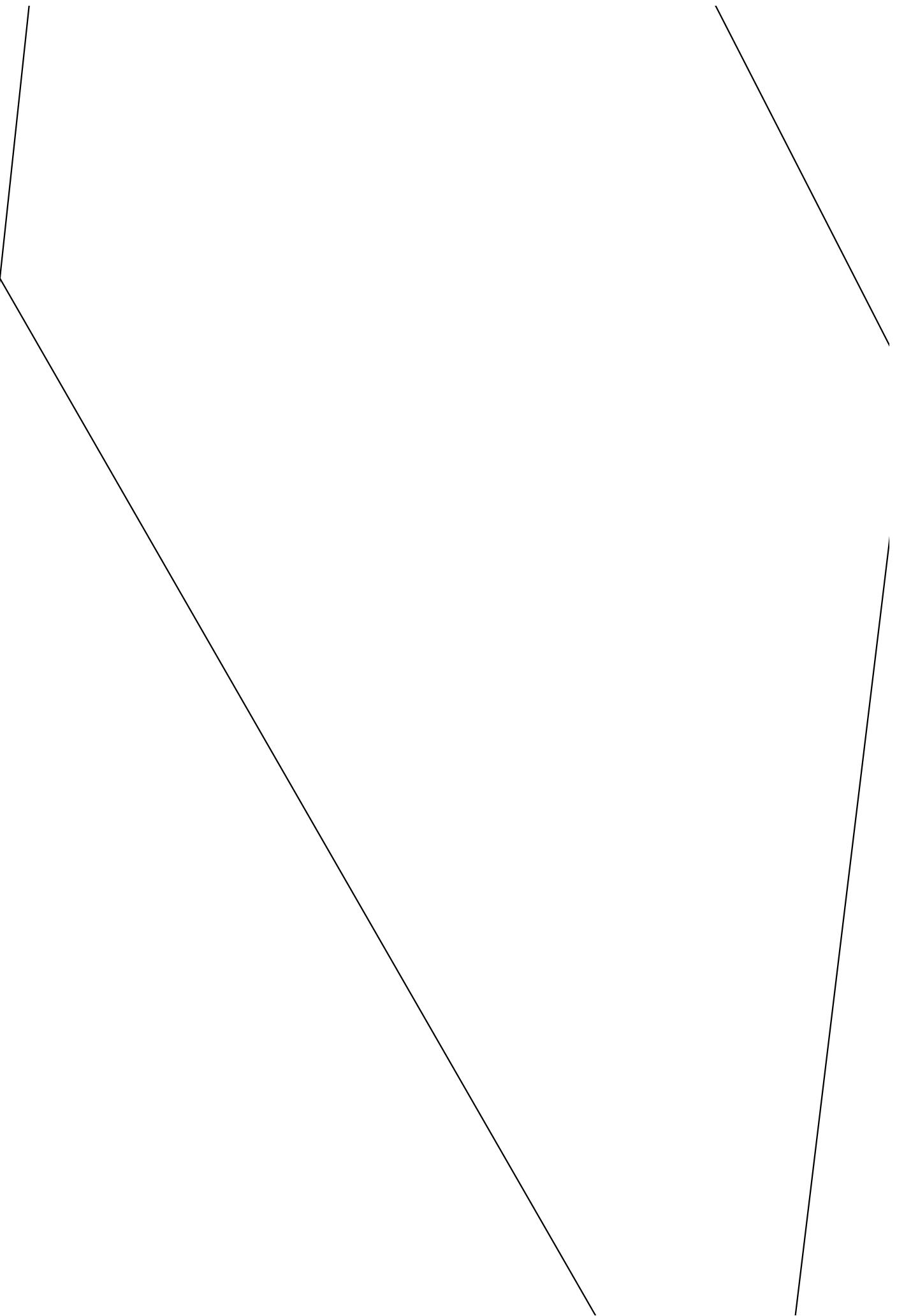


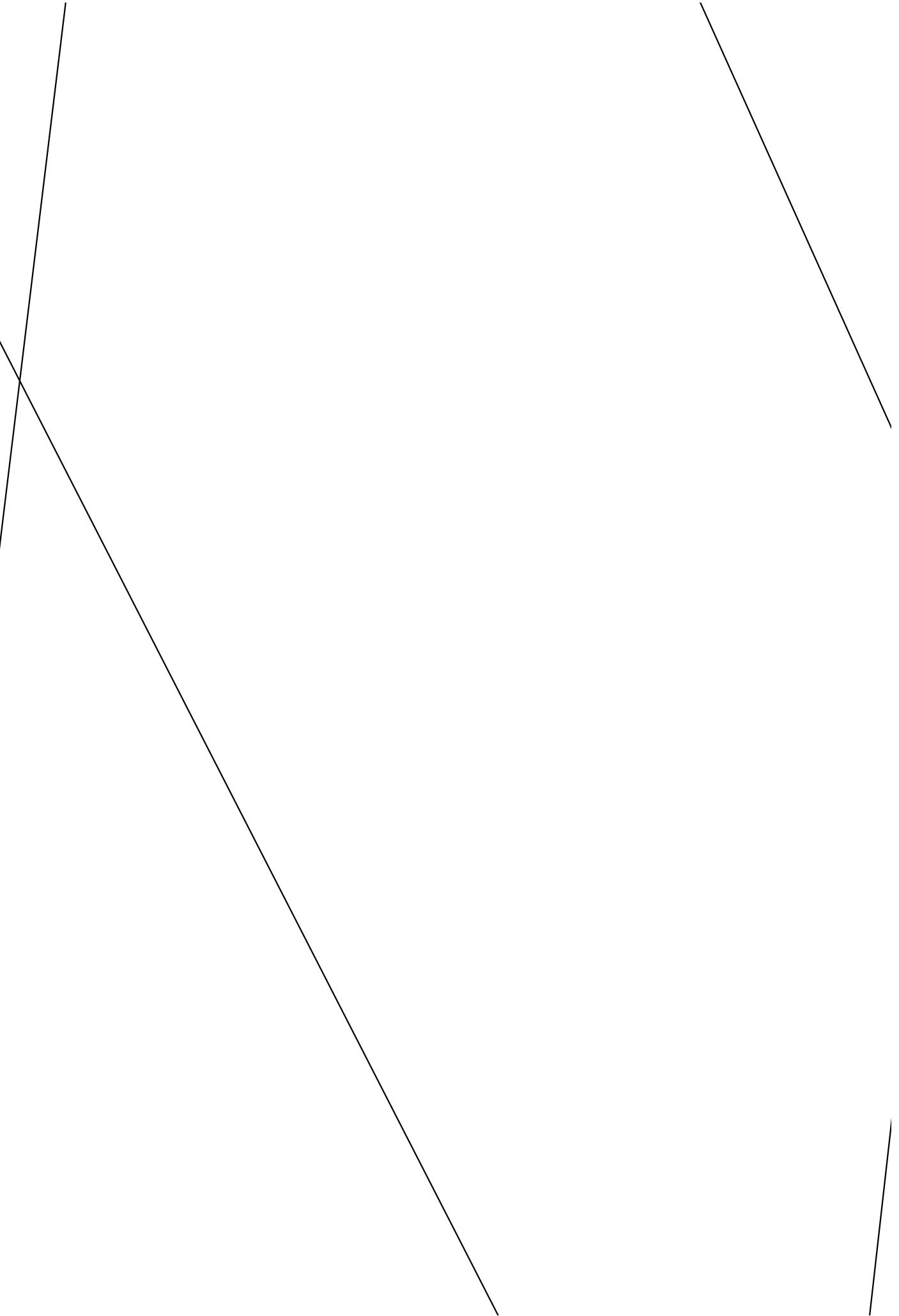


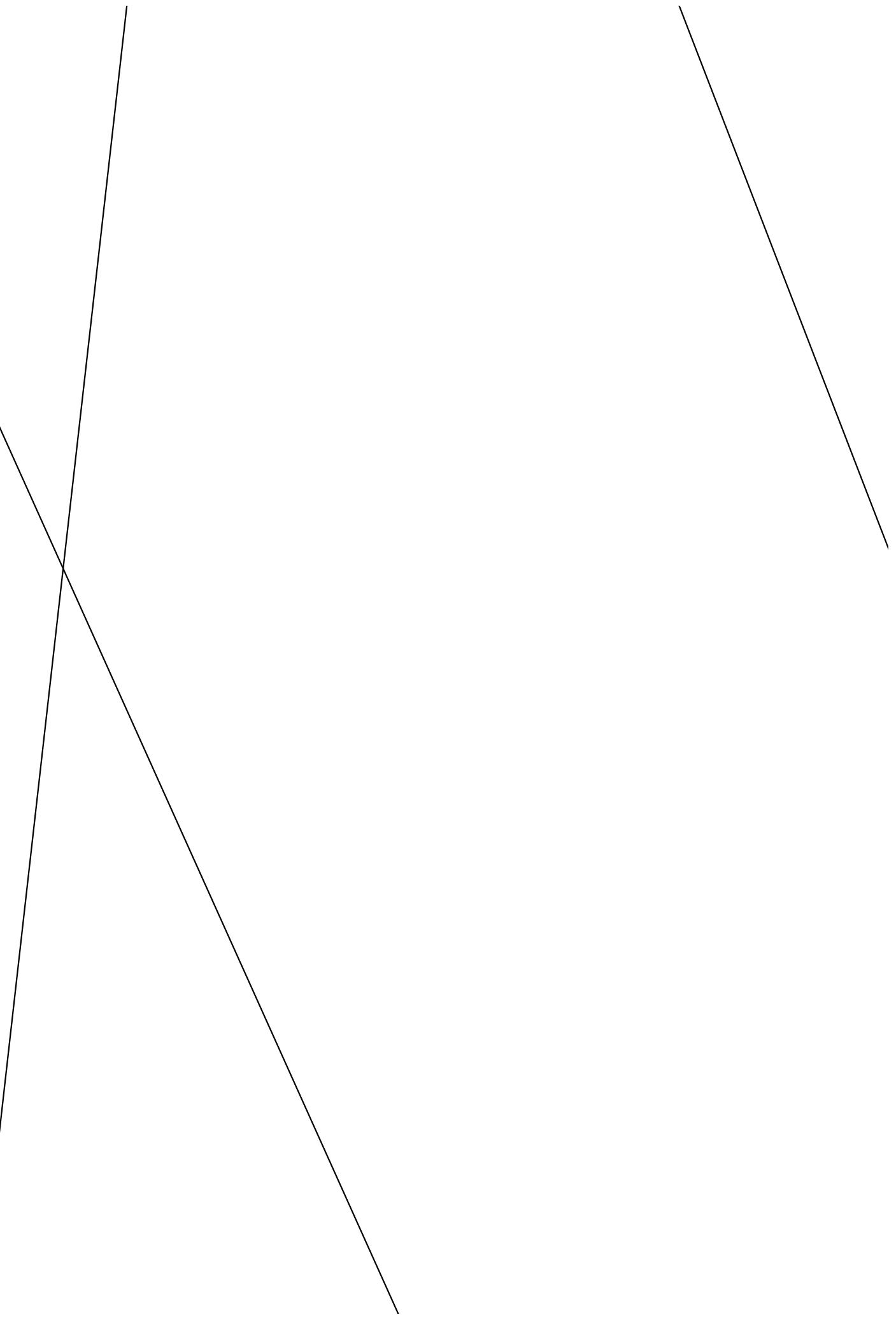




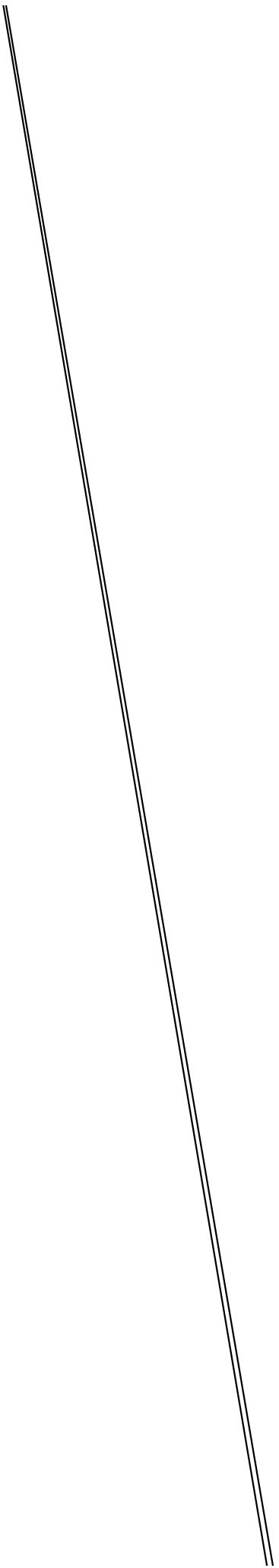


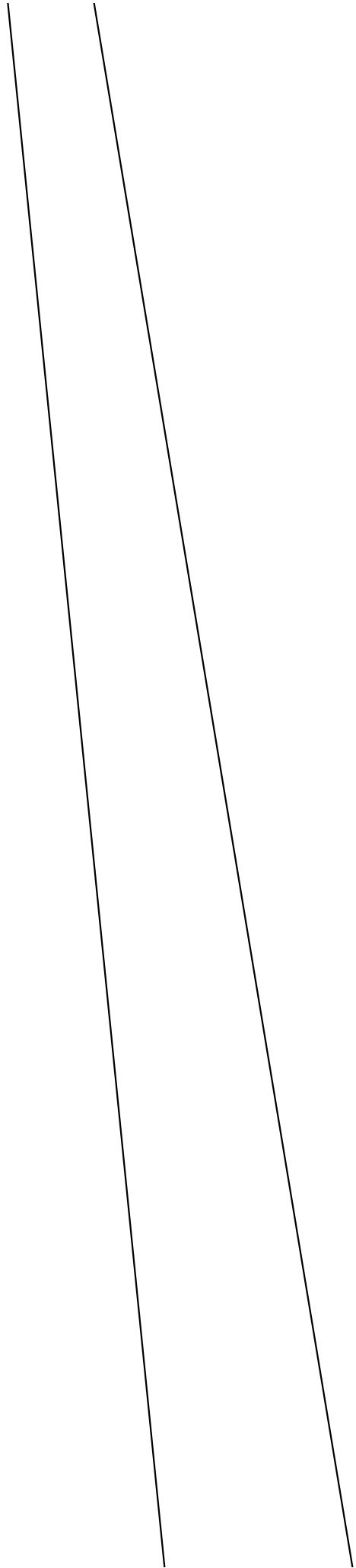




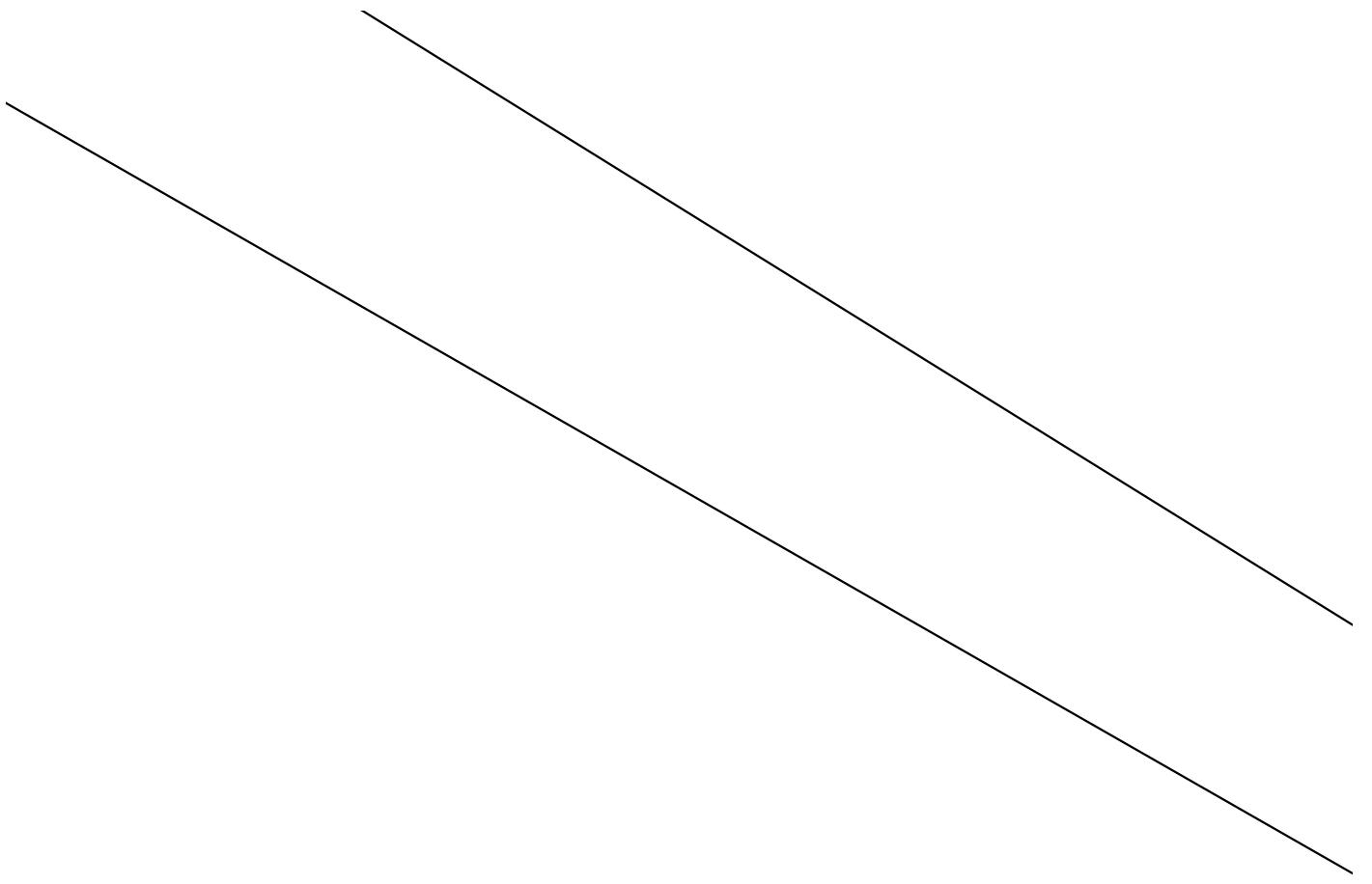


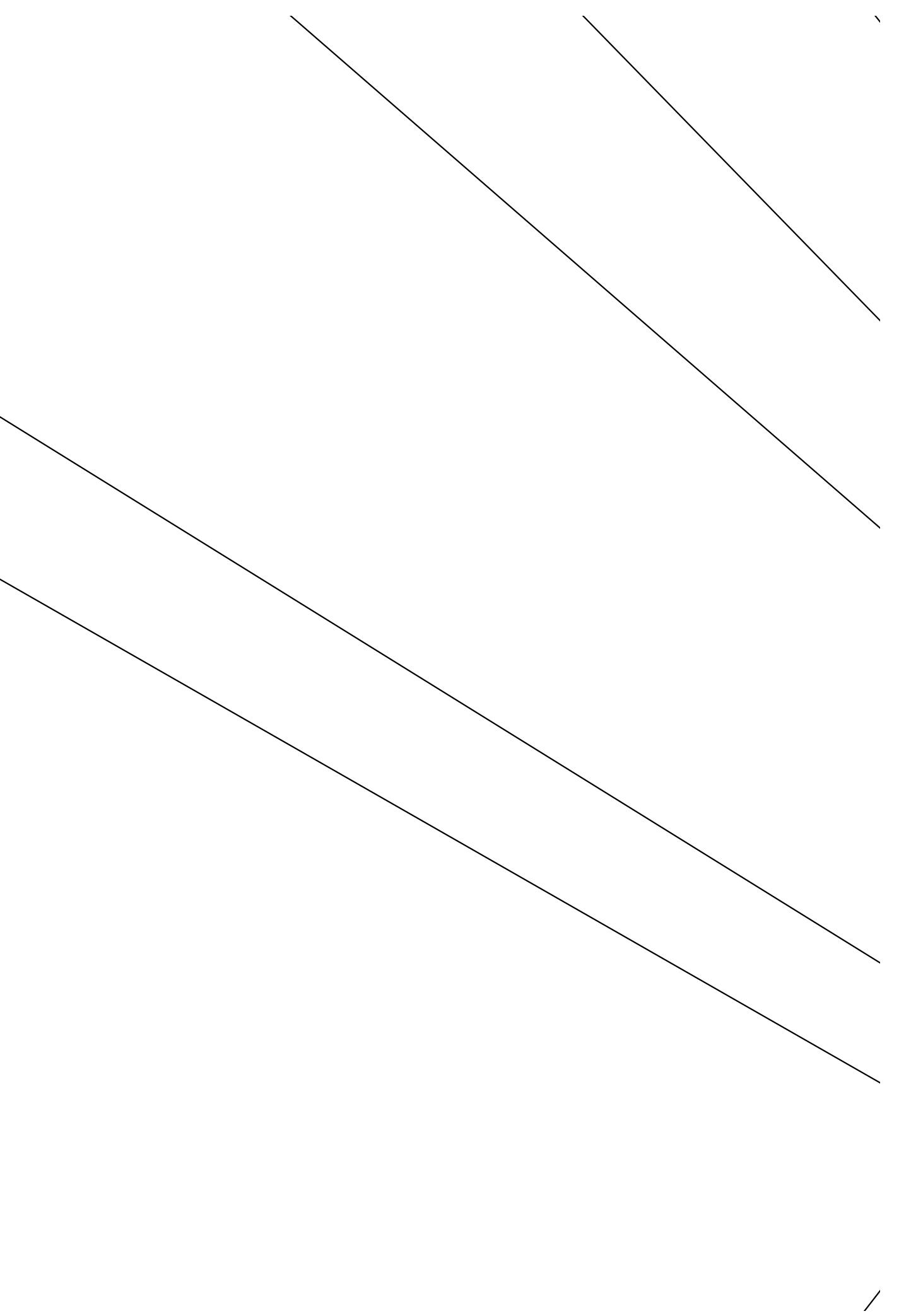


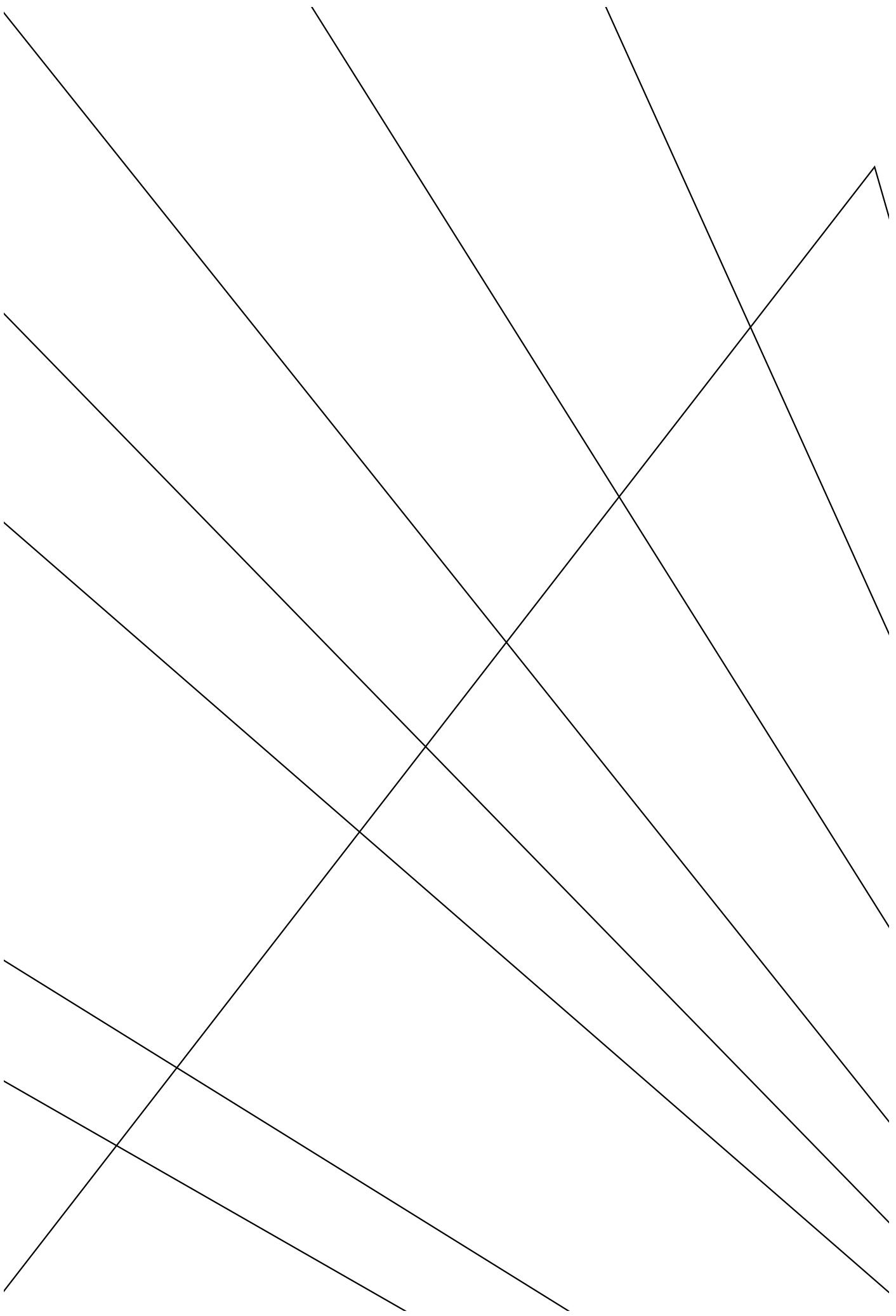


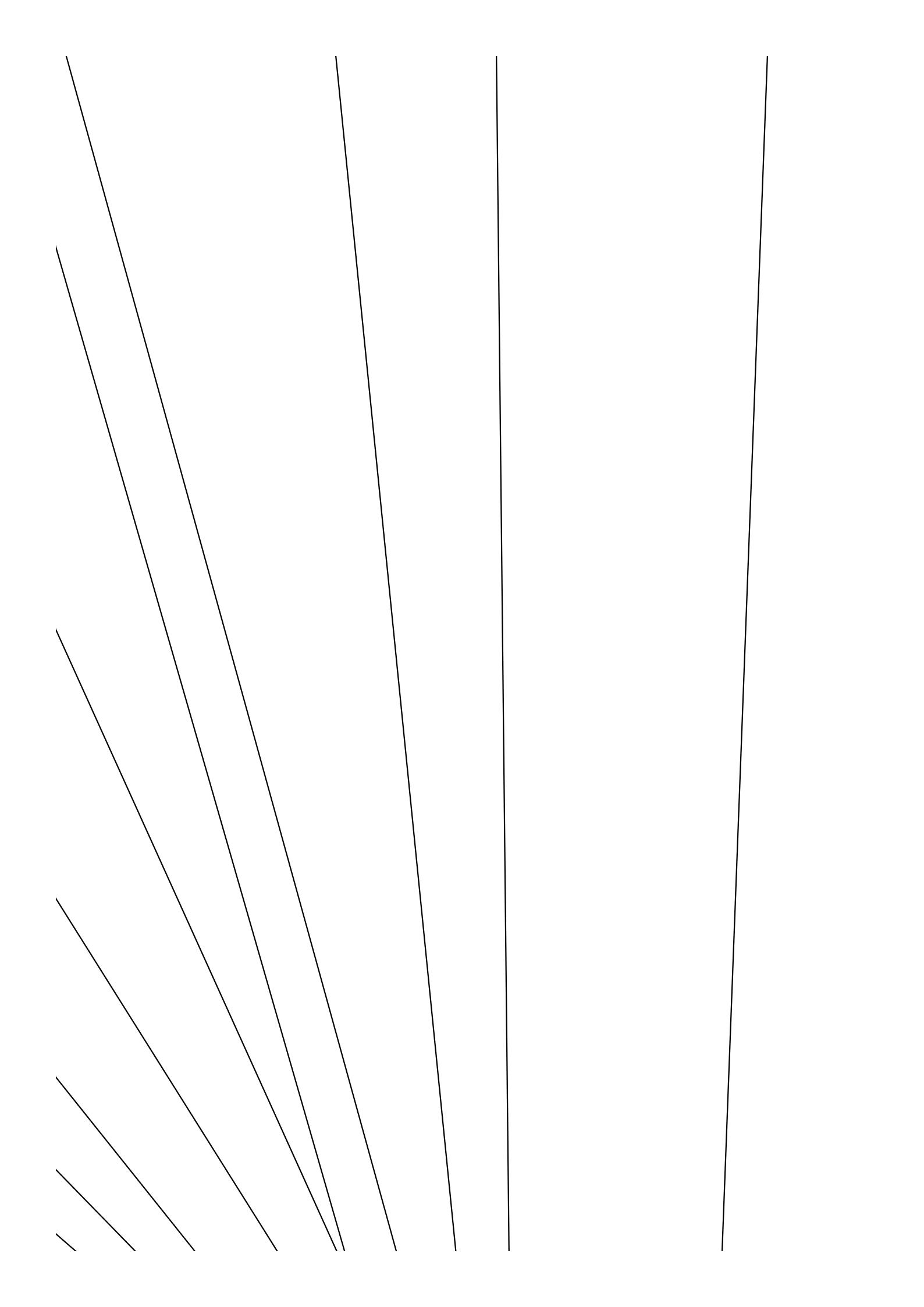


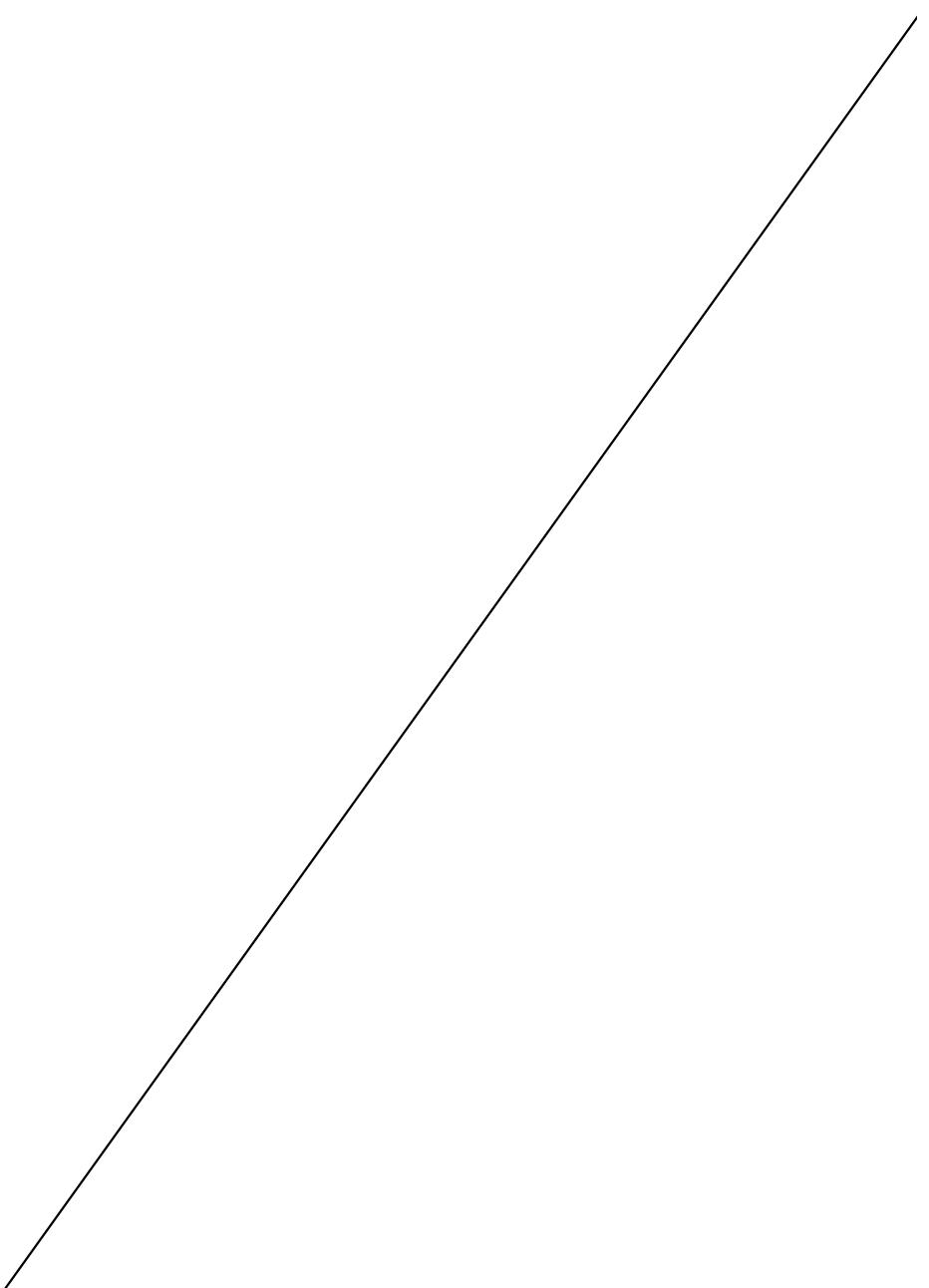
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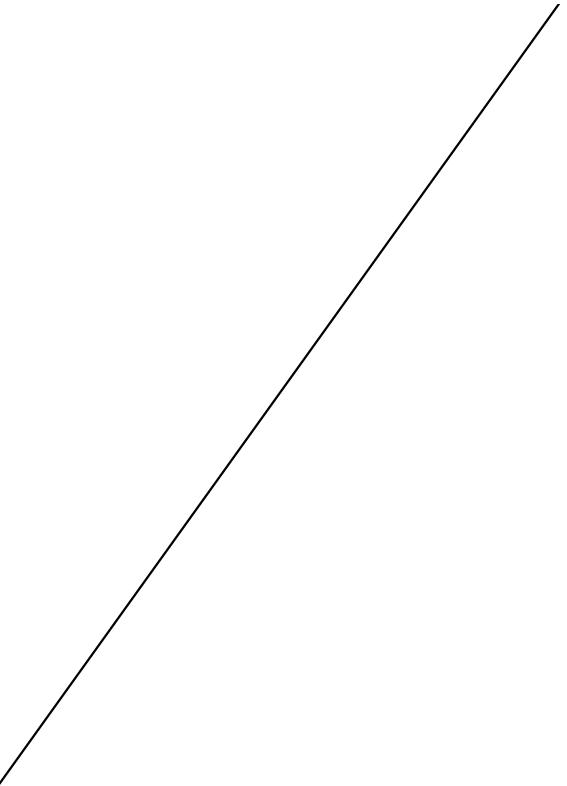


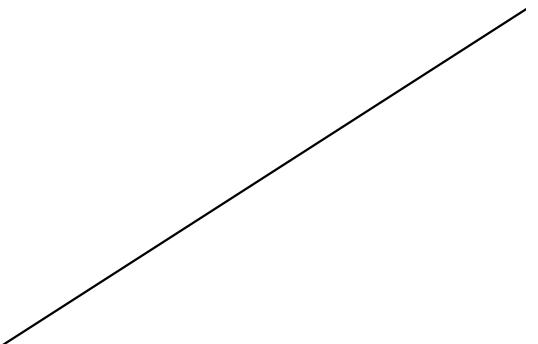


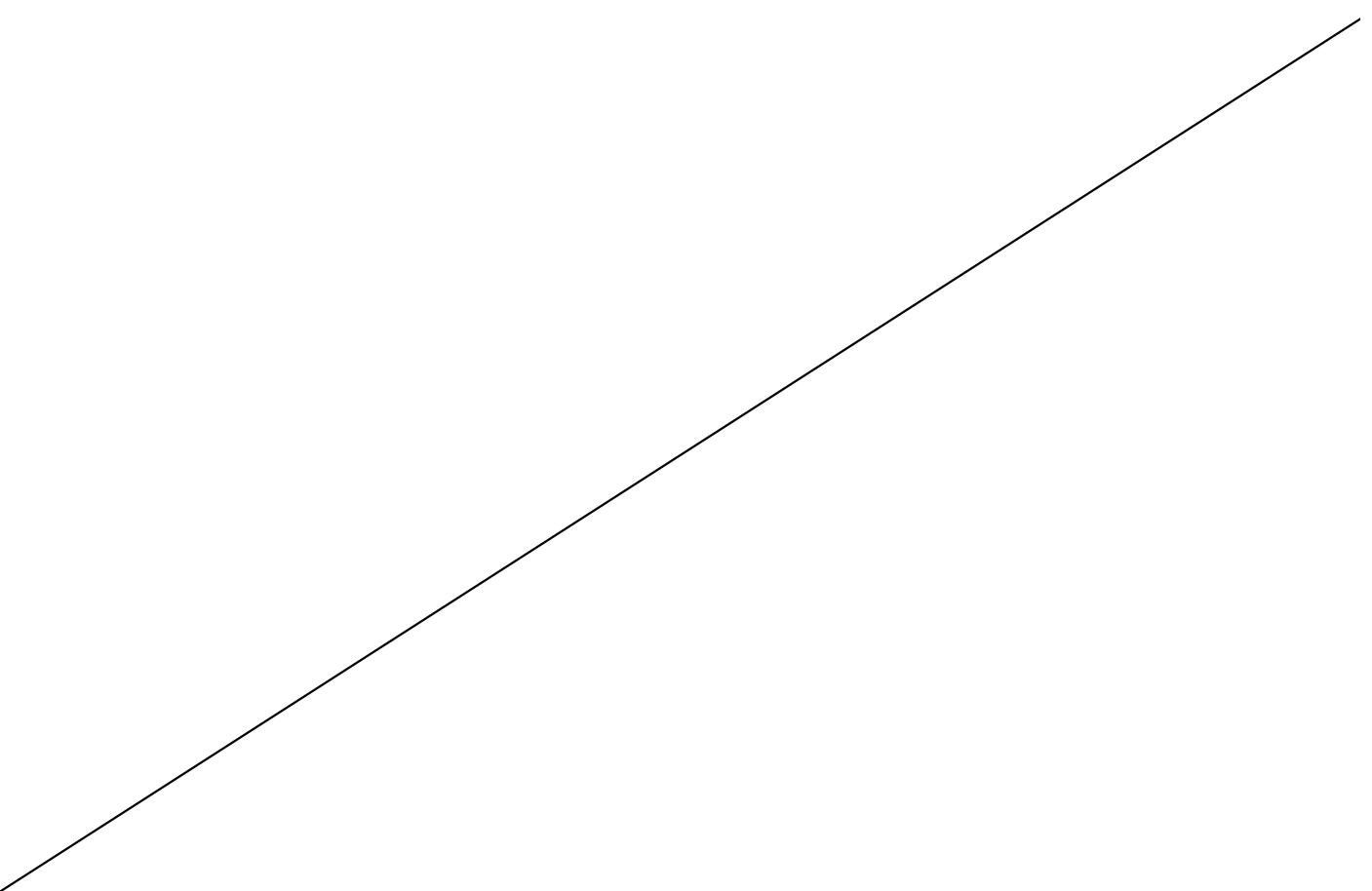


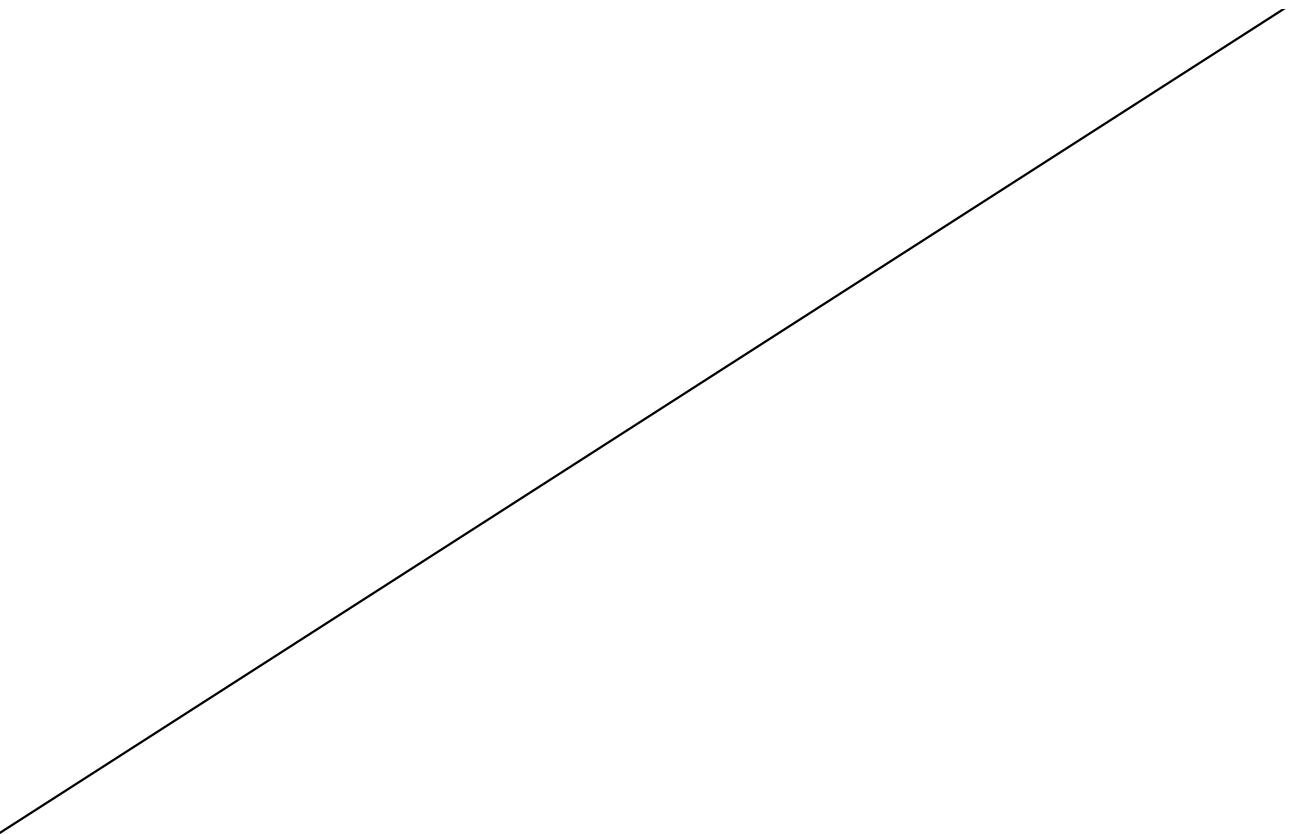


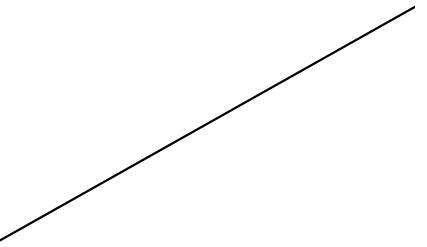


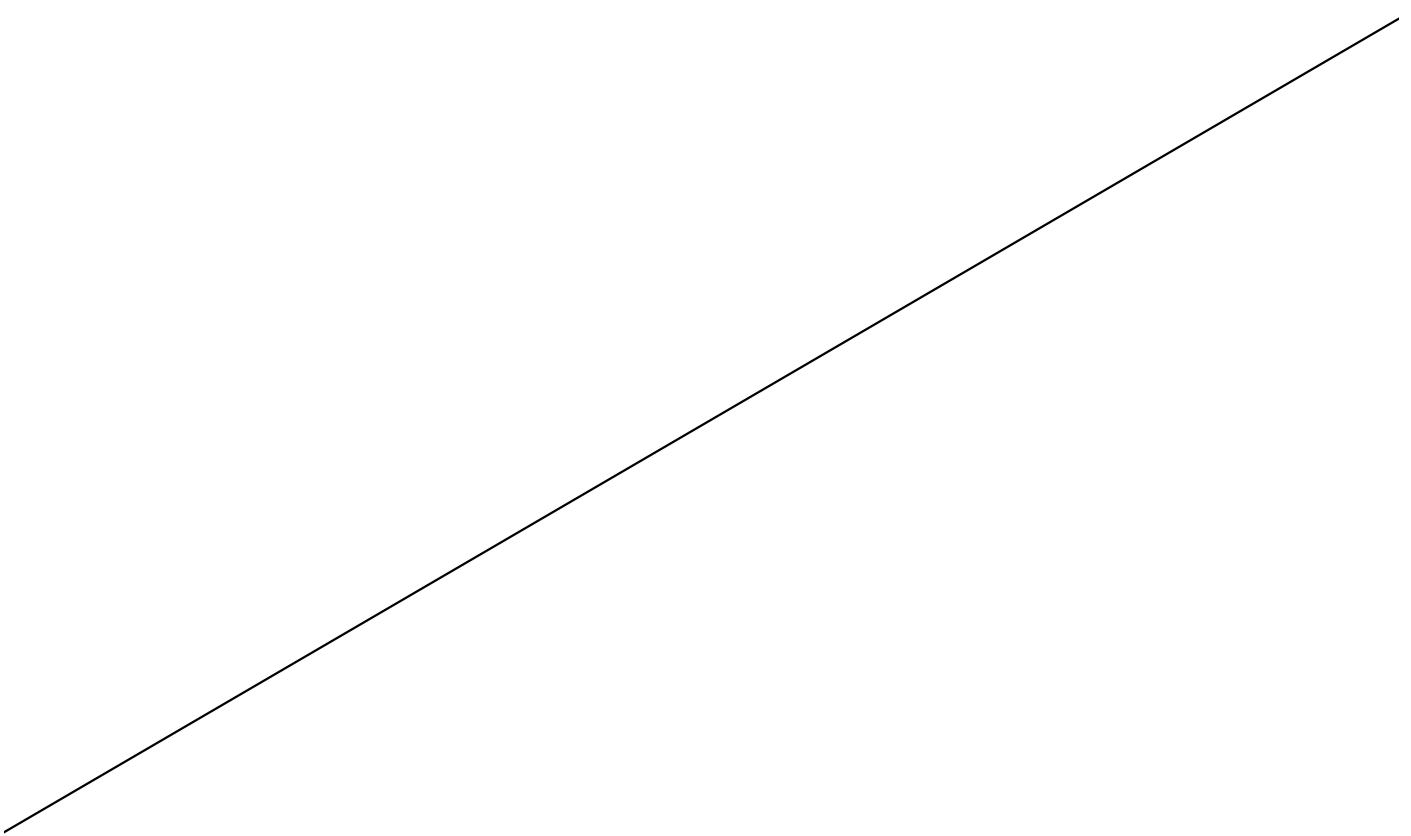


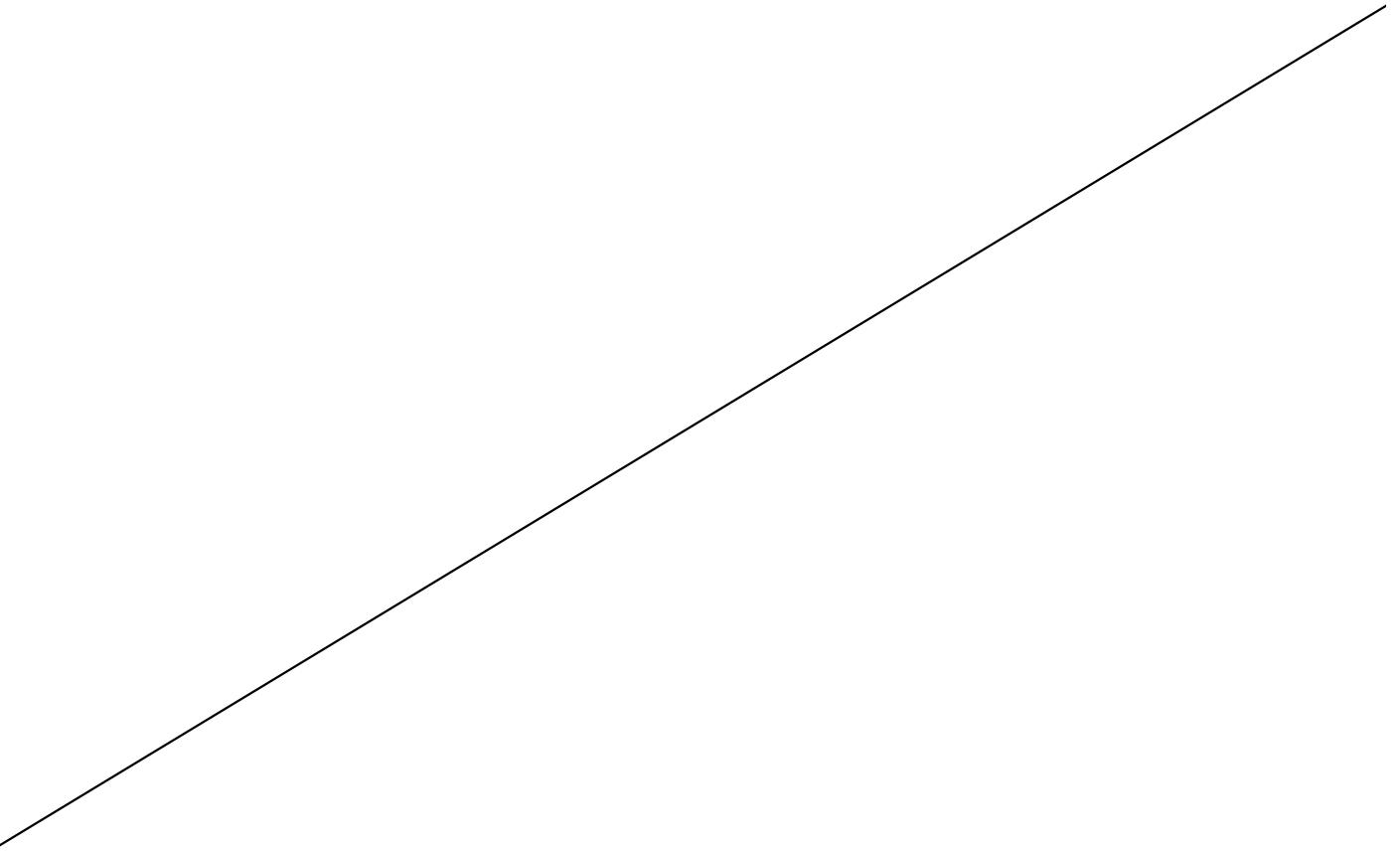


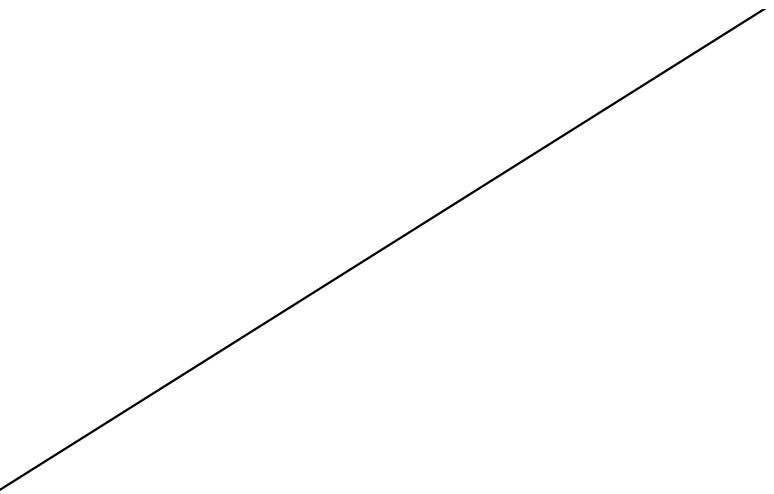




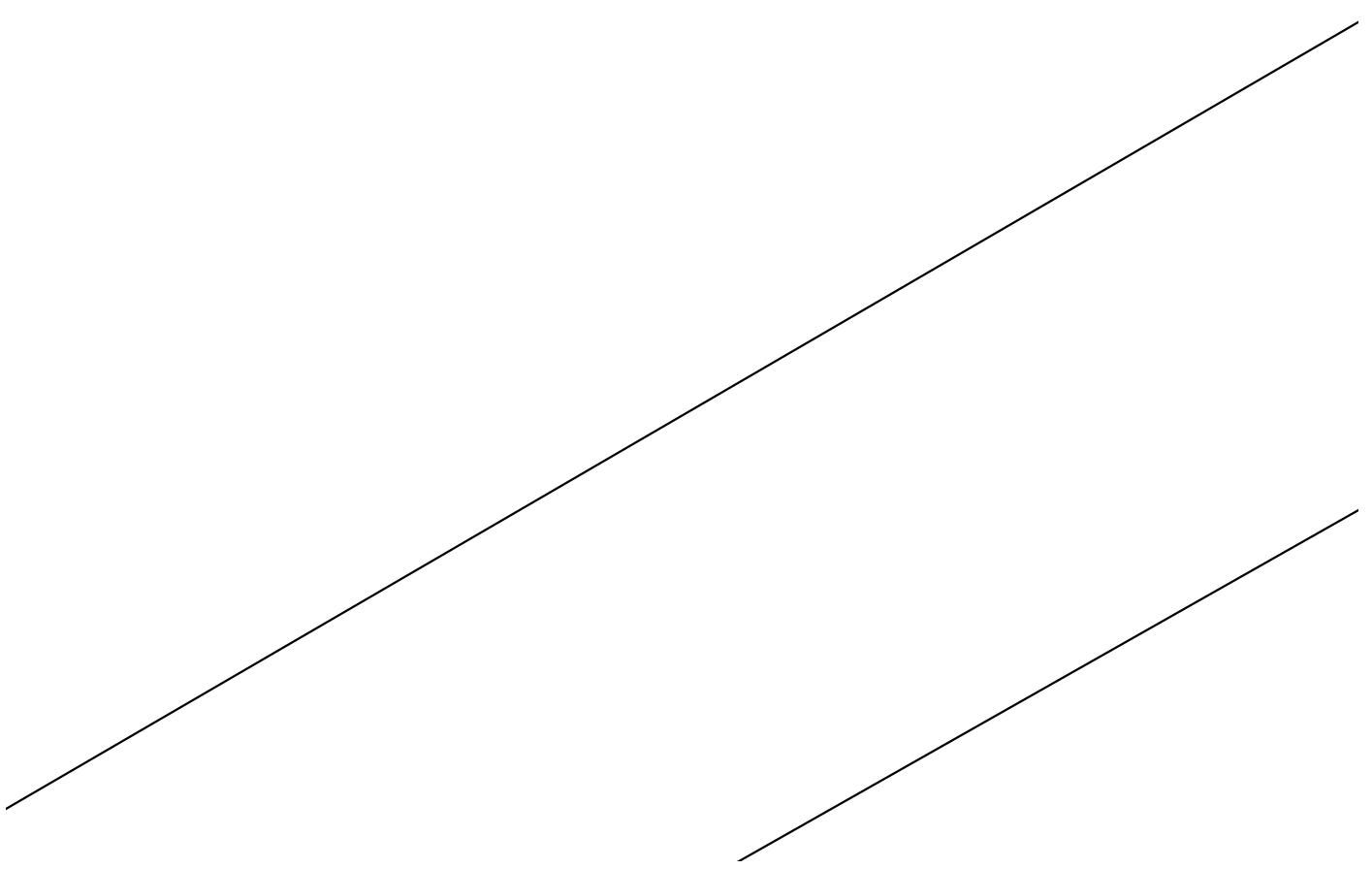


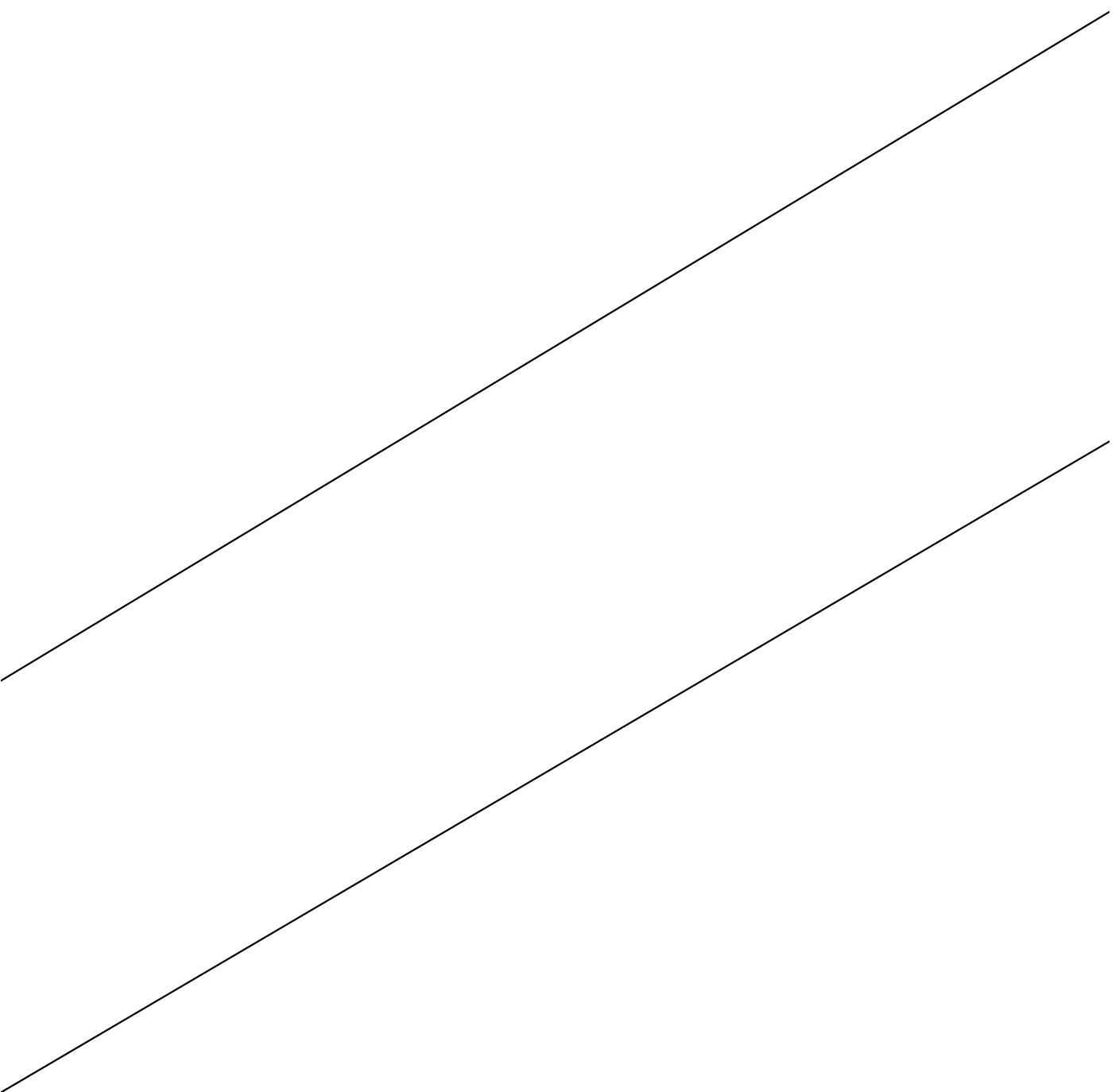


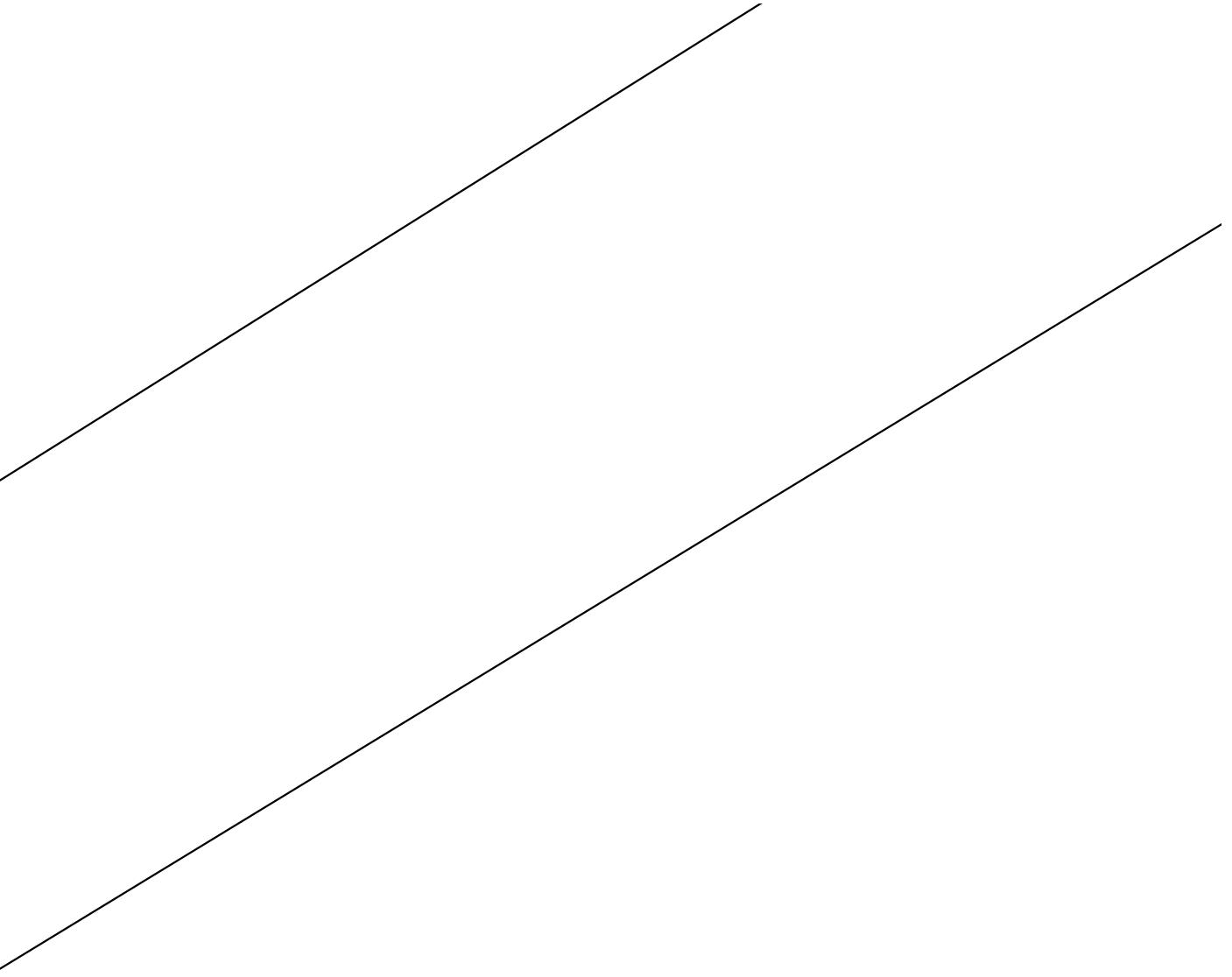


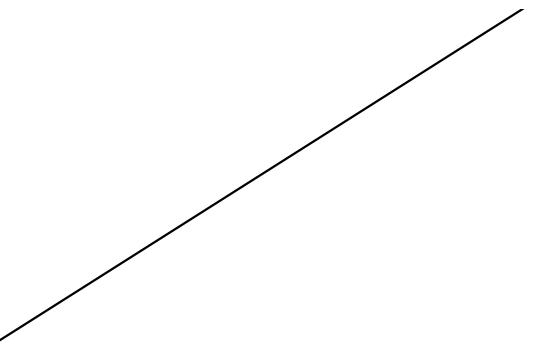






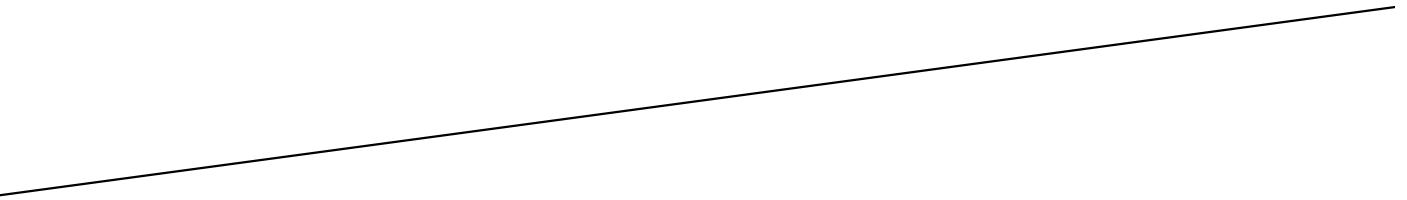


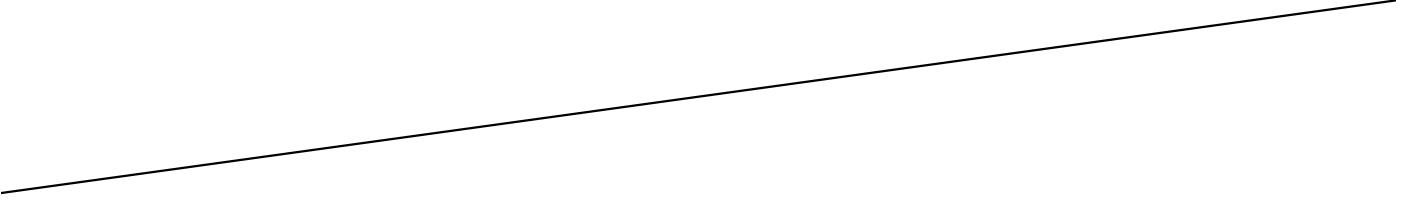


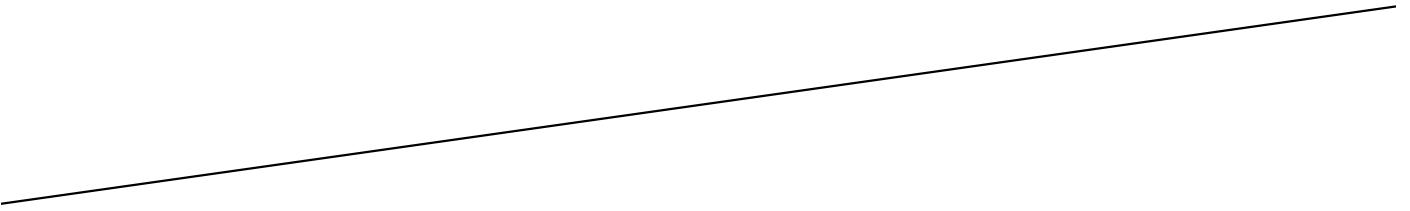


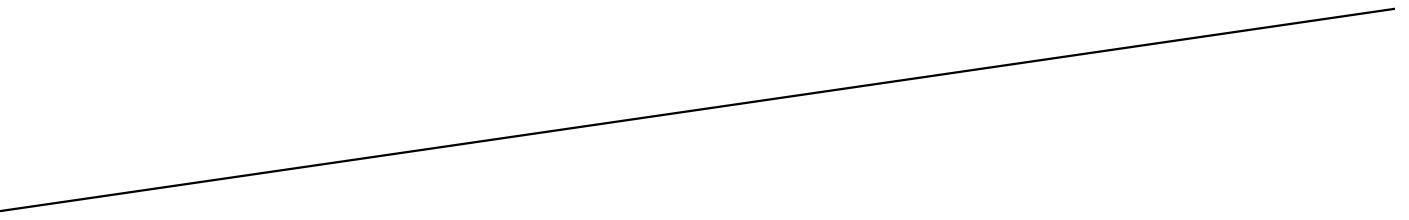


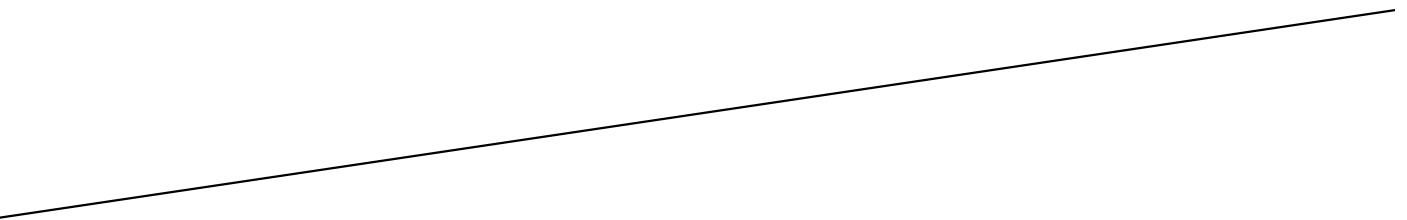


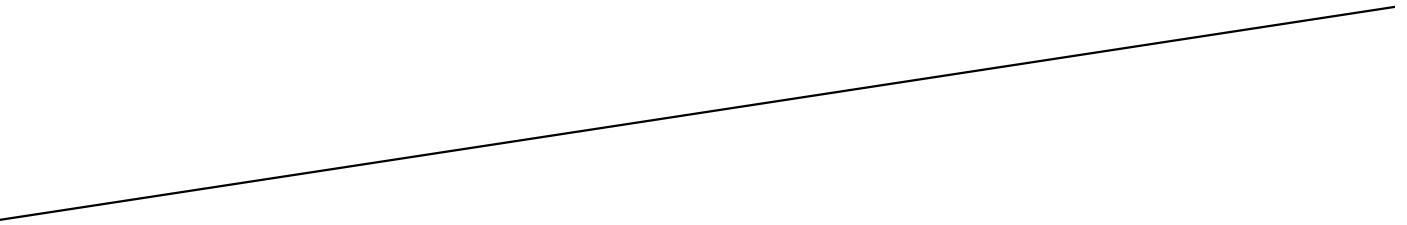


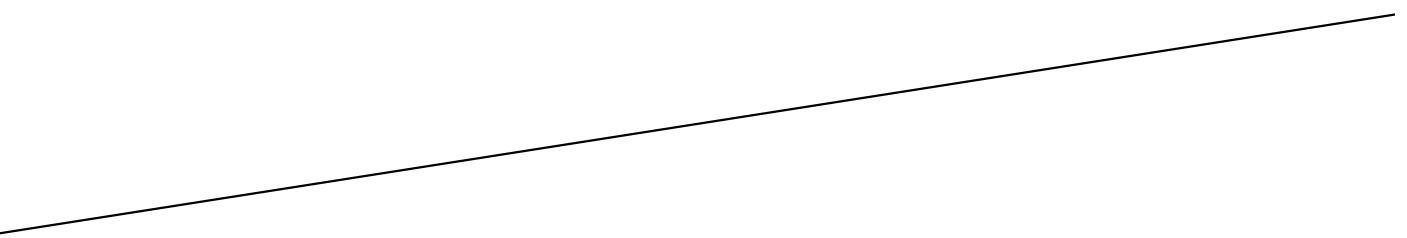


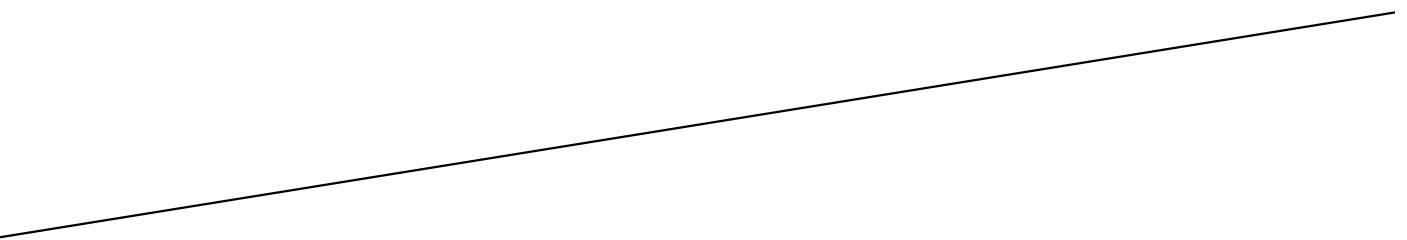


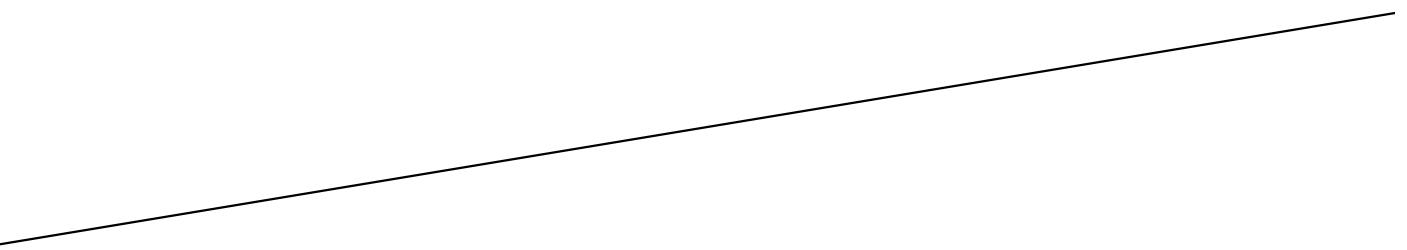


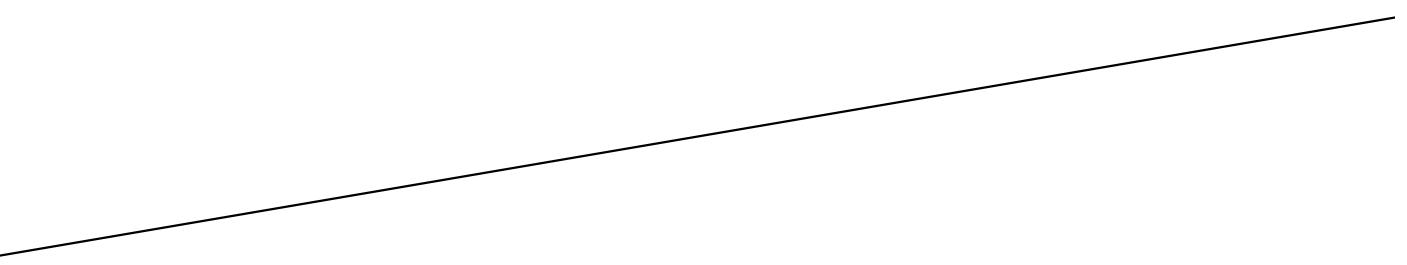


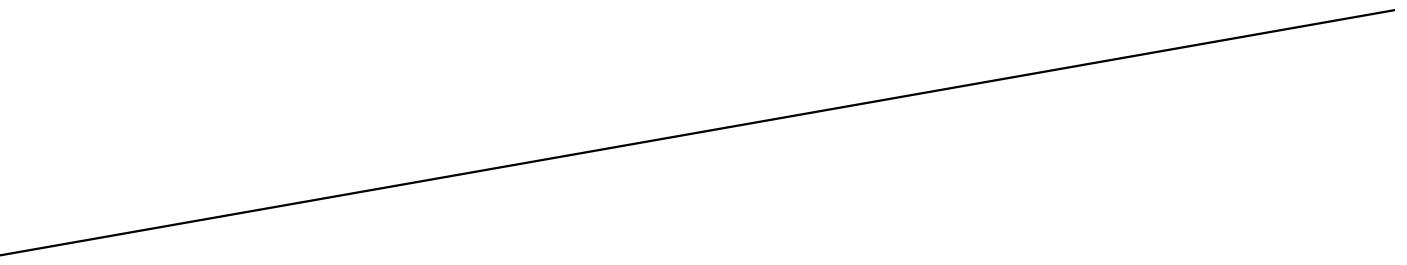


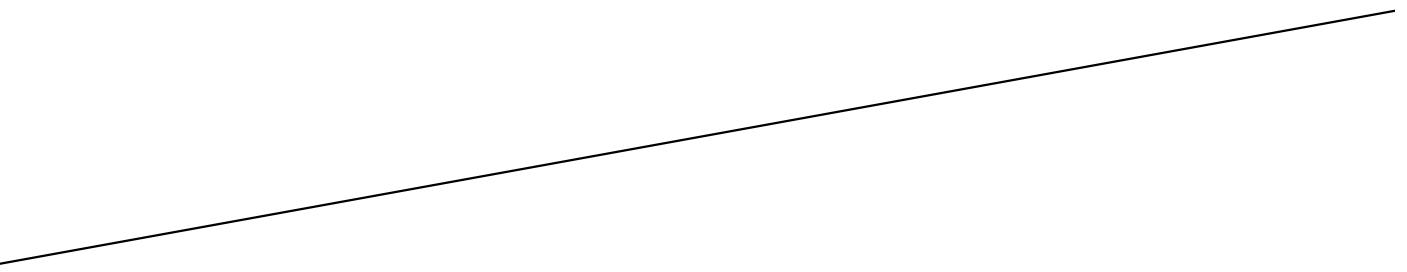


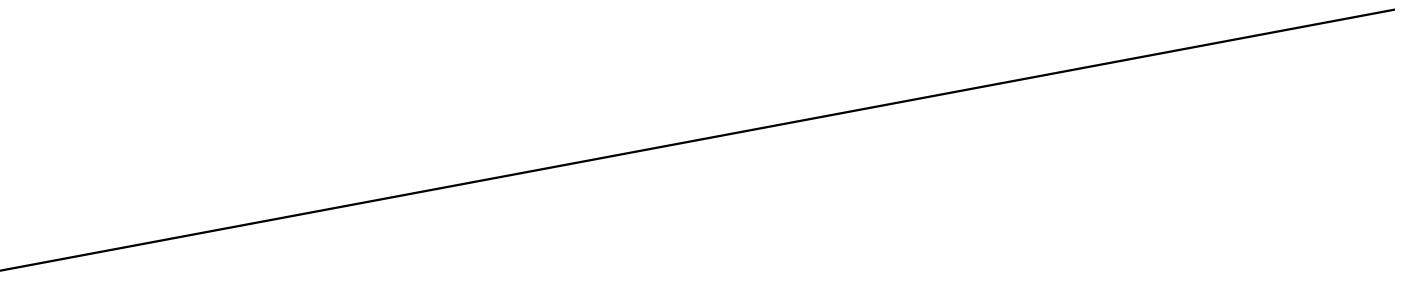


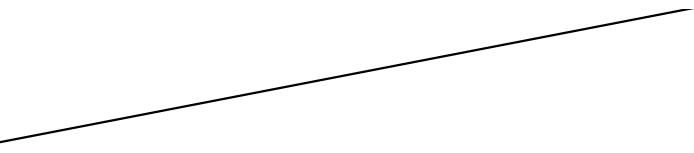














AbstractTreeClassMutater

```
# cn: ClassNode [1]
+ className: String [1]

«Create» + AbstractTreeClassMutater( in cv: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int)
«Create» + AbstractTreeClassMutater()
# mutateClass( in cn: ClassNode)
+ visit( in version: int, in access: int, in name: String, in signature: String, in superName: String, in interfaces: '[])
+ visitAnnotation( in desc: String, in visible: boolean): AnnotationVisitor
+ visitAttribute( in attr: Attribute)
+ visitField( in access: int, in name: String, in desc: String, in signature: String, in value: Object): FieldVisitor
+ visitInnerClass( in name: String, in outerName: String, in innerName: String, in access: int)
+ visitMethod( in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): MethodVisitor
+ visitOuterClass( in owner: String, in name: String, in desc: String)
+ visitSource( in source: String, in debug: String)
+ visitEnd()

«Create» + AbstractClassMutater( in cv: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int, in countin...
+ getMutationPoints(): IMutationPoint
+ getMutantLineNumber(): int
+ getMutantDescription(): String
+ getMethodDescriptor(): String
+ getMethodName(): String
+ setMutantLineNumber( in lineNumber: int)
+ setMutantDescription( in description: String)
+ setMutatedMethodName( in methodName: String)
+ setMutatedMethodDescriptor( in descriptor: String)
+ isCountingMutants(): boolean
+ shouldMutate(): boolean
+ getMutantIndex(): int
+ nextMutationPoint()
+ nextMutationPoint( in mutantsCount: int)
+ getMutantLineNumber()
+ getMutantLineNumber( in null: <Undefined>)
+ getMutantDescription()
+ getMutantDescription( in null: <Undefined>)
+ getMethodDescriptor()
+ getMethodDescriptor( in null: <Undefined>)
+ getMethodName()
+ getMethodName( in null: <Undefined>)
+ getMutationPoints()
+ getMutationPoints( in null: <Undefined>)
+ getMutationPoints(): IMutationPoint
+ getMutationPoints(): IMutationPoint
+ getMutationPoints(): IMutationPoint
```

```
AbstractTreeClassMutater
AbstractTreeClassMutater
visit
visitAnnotation
visitAttribute
visitField
visitInnerClass
visitMethod
visitOuterClass
visitSource
visitEnd
AbstractClassMutater
```

String)

ndVisitor

gMutants: boolean)

AbstractCoreClassMutater

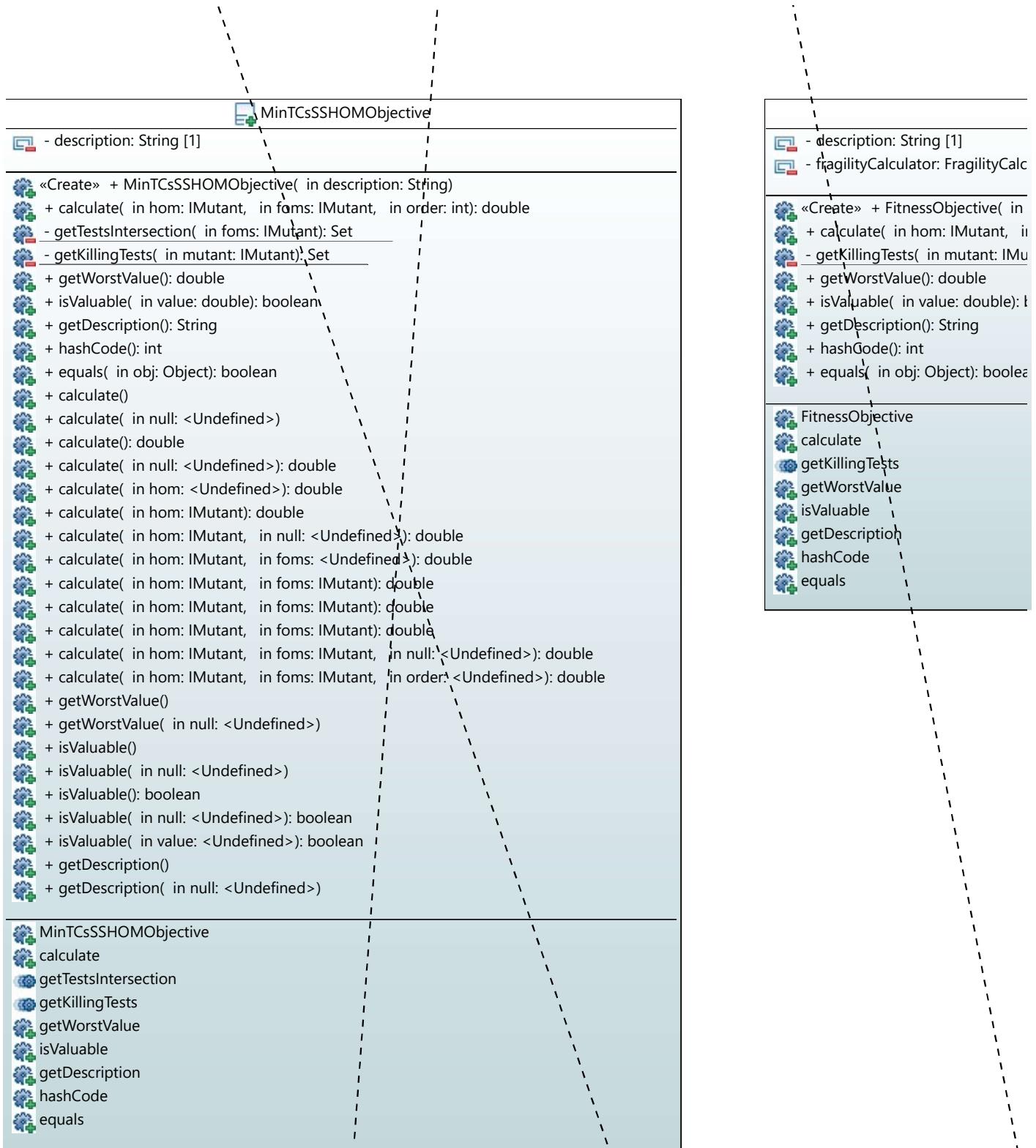
```
+ className: String [1]

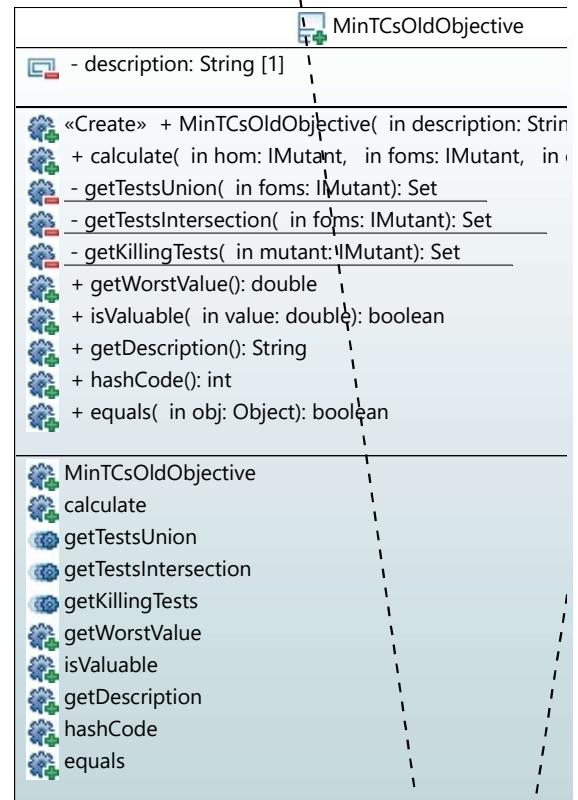
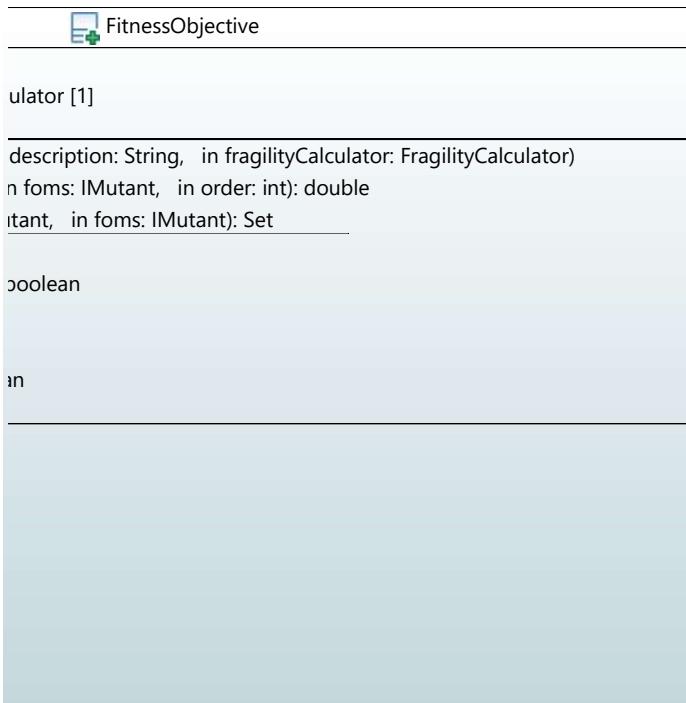
«Create» + AbstractCoreClassMutater( in cv: ClassVisitor, in mutationPointIndex: int, in mu
«Create» + AbstractCoreClassMutater()
+ visit( in version: int, in access: int, in name: String, in signature: String, in superName:
+ visitSource( in source: String, in debug: String)
+ visitOuterClass( in owner: String, in name: String, in desc: String)
+ visitAnnotation( in desc: String, in visible: boolean): AnnotationVisitor
+ visitAttribute( in attr: Attribute)
+ visitInnerClass( in name: String, in outerName: String, in innerName: String, in access: i
+ visitField( in access: int, in name: String, in desc: String, in signature: String, in value: C
+ visitMethod( in access: int, in name: String, in desc: String, in signature: String, in exce
+ visitEnd()
«Create» + AbstractClassMutater( in cv: ClassVisitor, in mutationPointIndex: int, in mutant
+ getMutationPoints(): IMutationPoint
+ getMutantLineNumber(): int
+ getMutantDescription(): String
+ getMethodDescriptor(): String
+ getMethodName(): String
+ setMutantLineNumber( in lineNumber: int)
+ setMutantDescription( in description: String)
+ setMutatedMethodName( in methodName: String)
+ setMutatedMethodDescriptor( in descriptor: String)
+ isCountingMutants(): boolean
+ shouldMutate(): boolean
+ getMutantIndex(): int
+ nextMutationPoint()
+ nextMutationPoint( in mutantsCount: int)
+ getMutantLineNumber()
+ getMutantLineNumber( in null: <Undefined>)
+ getMutantDescription()
+ getMethodDescriptor()
+ getMethodDescriptor( in null: <Undefined>)
+ getMethodName()
+ getMethodName( in null: <Undefined>)
+ getMutationPoints()
+ getMutationPoints( in null: <Undefined>)
+ getMutationPoints(): IMutationPoint
+ getMutationPoints(): IMutationPoint
+ getMutationPoints(): IMutationPoint
```

```
AbstractCoreClassMutater
AbstractCoreClassMutater
visit
visitSource
visitOuterClass
visitAnnotation
visitAttribute
visitInnerClass
visitField
visitMethod
visitEnd
AbstractClassMutater
getMutationPoints
getMutantLineNumber
```

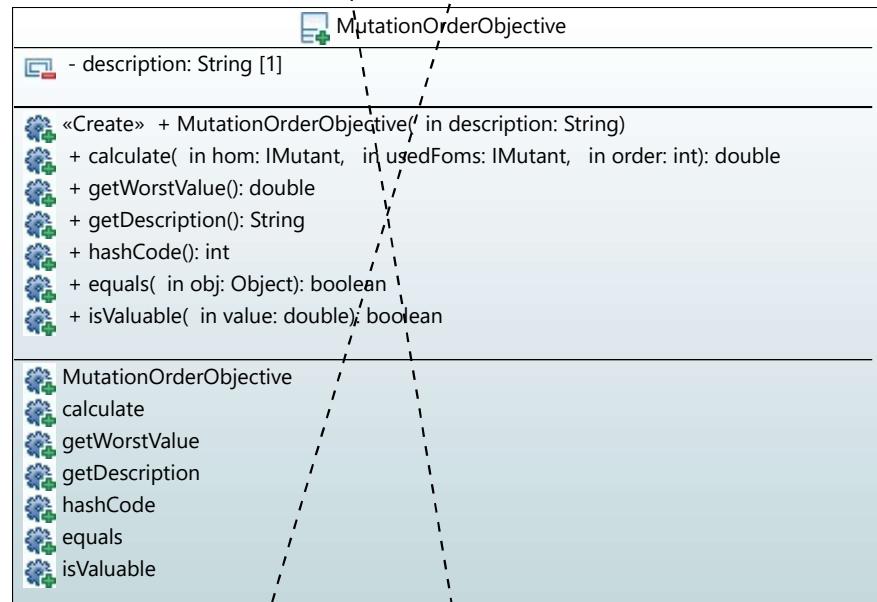


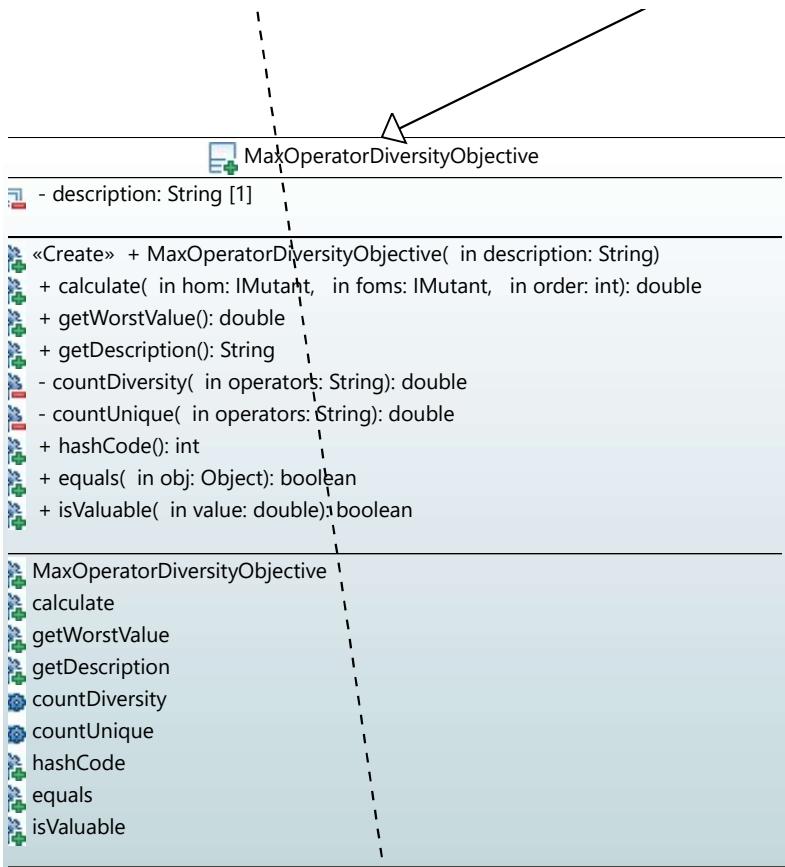
MinTCsNewObjective	
- description: String [1]	
«Create» + MinTCsNewObjective(in description: String)	
+ calculate(in hom: IMutant, in foms: IMutant, in order: int): double	
- getTestsUnion(in foms: IMutant): Set	
- getKillingTests(in mutant: IMutant): Set	
+ getWorstValue(): double	
+ isValuable(in value: double): boolean	
+ getDescription(): String	
+ hashCode(): int	
+ equals(in obj: Object): boolean	
+ calculate()	
+ calculate(in null: <Undefined>)	
+ calculate(): double	
+ calculate(in null: <Undefined>): double	
+ calculate(in hom: <Undefined>): double	
+ calculate(in hom: IMutant): double	
+ calculate(in hom: IMutant, in null: <Undefined>): double	
+ calculate(in hom: IMutant, in foms: <Undefined>): double	
+ calculate(in hom: IMutant, in foms: IMutant): double	
+ calculate(in hom: IMutant, in foms: IMutant): double	
+ calculate(in hom: IMutant, in foms: IMutant, in null: <Undefined>): double	
+ calculate(in hom: IMutant, in foms: IMutant, in order: <Undefined>): double	
+ getWorstValue()	
+ getWorstValue(in null: <Undefined>)	
+ isValuable()	
+ isValuable(in null: <Undefined>)	
+ isValuable(): boolean	
+ isValuable(in null: <Undefined>): boolean	
+ isValuable(in value: <Undefined>): boolean	
+ getDescription()	
+ getDescription(in null: <Undefined>)	
MinTCsNewObjective	
calculate	
getTestsUnion	
getKillingTests	
getWorstValue	
isValuable	
getDescription	
hashCode	
equals	





ig)
order: int): double







ss: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
nt, in name: String, in desc: String, in signature: String, in value: Object): boolean
lex: int): int

Mutater
or, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
itionPoint
tIndex: int, in mutantIndex: int): IMutantBytecode
:: IMutationPoint): IMutantBytecode

nt)

utater
ir, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater

- DESCRIPTION: String
INIT: String [1]
CLINIT: String [1]
JAVA: String [1]
THIS: String [1]

createCountingClass
createClassMutater
+ getDescription(): String
+ getMutationPoints()
+ mutate(in bytecode)
+ mutate(in bytecode)
getReaderFlags(): int
getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment(environment)
getEnvironment(): IEnvironment
+ toString(): String
createCountingClass
createClassMutater

createCountingClass
createClassMutater
getDescription
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
toString
verify
trace
trace

 InterruptionGuard
g [1]

```

isMutater(): AbstractClassMutater
( in cv: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
String
( in bytecode: byte): IMutationPoint
byte: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
byte: byte, in mutationPoint: IMutationPoint): IMutantBytecode
it
t

String
environment: IEnvironment)
Environment

isMutater(): AbstractClassMutater
( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
Mutater

```

	# INIT: String
	# CLINIT: String
	# JAVA: String
	# THIS: String
 + getDescrip	
 - checkMet	
 - canReplace	
 - isDefaultCo	
 - getDefault	
 - isNestedCl	
 - getOuterC	
 # createClas	
 # createCou	
 + getMutati	
 + mutate(i	
 # getReader	
 # getWriter	
 + getName(
 + getDescrip	
 + setEnviror	
 # getEnviror	
 + toString():	
 # createCou	
 # createClas	
 getDescriptio	
 checkMethod	
 canReplaceS	
 isDefaultCons	
 getDefaultCo	
 isNestedClas	
 getOuterClas	
 createClassN	
 createCounti	
 ClassMutate	
 getMutation	
 mutate	
 mutate	
 mutate	
 createClassW	
 getReaderFla	
 getWriterFla	
 getName	
 getDescrip	
 setEnvironme	
 getEnvironm	
toString	
verify	
trace	
trace	



g [1]
ring [1]
ig [1]
ig [1]

option(): String
hood(in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): boolean
eSuperCall(in className: String, in name: String, in desc: String): boolean
nstructor(in className: String, in method: MethodInfo): boolean
ConstructorDesc(in className: String): String
ass(in className: String): boolean
lassName(in className: String): String
isMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
ntingClassMutater(): AbstractClassMutater
onPoints(in bytecode: byte): IMutationPoint
n bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
n bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
Flags(): int
Flags(): int
): String
option(): String
nment(in environment: IEnvironment)
nment(): IEnvironment
String
nitingClassMutater(): AbstractClassMutater
sMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater

on
d
uperCall
tructor
nstructorDesc
s
ssName
lutater
ingClassMutater
r
Points

/riter
ags
gs

on
ent
ent

IOR

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
+ createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
# createCountingClassMutater(): AbstractClassMutater
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment( in environment: IEnvironment)
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
```

```
getDescription
createClassMutater
createCountingClassMutater
ClassMutater
getMutationPoints
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
toString
verify
trace
trace
```

JID	
<ul style="list-style-type: none"> - cache: Map [1] # INIT: String [1] # CLINIT: String [1] # JAVA: String [1] # THIS: String [1] 	
<ul style="list-style-type: none"> + getDescription(): String # createCountingClassMutater(): AbstractClassMutater # createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater - isDefaultAssignment(in node: FieldInsnNode): boolean + getMutationPoints(in bytecode: byte): IMutationPoint + mutate(in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode + mutate(in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode # getReaderFlags(): int # getWriterFlags(): int + getName(): String + getDescription(): String + setEnvironment(in environment: IEnvironment) # getEnvironment(): IEnvironment + toString(): String # createCountingClassMutater(): AbstractClassMutater # createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater 	
<ul style="list-style-type: none"> getDescription createCountingClassMutater createClassMutater isDefaultAssignment ClassMutater FieldInsnns FieldInsn getMutationPoints mutate mutate mutate createClassWriter getReaderFlags getWriterFlags getName getDescription setEnvironment getEnvironment toString verify trace trace 	

CCE

- PROVIDER: MethodVisitorProvider [1]
- VERIFIER: TypeVerifier [1]
- DESCRIPTION: String [1]
INIT: String [1]
CLINIT: String [1]
JAVA: String [1]
THIS: String [1]

createCountingClassMutater(): AbstractClassMutater
createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
+ getDescription(): String
+ getMutationPoints(in bytecode: byte): IMutationPoint
+ mutate(in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate(in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
getReaderFlags(): int
getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment(in environment: IEnvironment)
getEnvironment(): IEnvironment
+ toString(): String
createCountingClassMutater(): AbstractClassMutater
createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater

createCountingClassMutater
createClassMutater
getDescription
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
toString
verify
trace
trace

 ORV

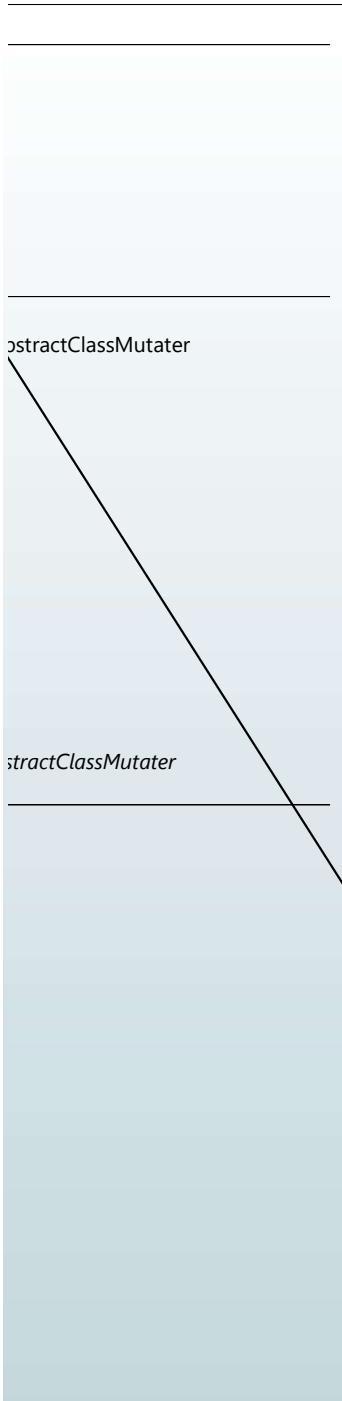
AbstractMutater

AbstractMutater

- PROVIDER: MethodVisitorProvider [1]
- VERIFIER: TypeVerifier [1]
- DESCRIPTION: String [1]
INIT: String [1]
CLINIT: String [1]
JAVA: String [1]
THIS: String [1]

createCountingClassMutater(): AbstractClassMutater
createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractMutater
+ getDescription(): String
+ getMutationPoints(in bytecode: byte): IMutationPoint
+ mutate(in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate(in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
+ getReaderFlags(): int
+ getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment(in environment: IEnvironment)
getEnvironment(): IEnvironment
+ toString(): String
createCountingClassMutater(): AbstractClassMutater
createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractMutater

createCountingClassMutater
createClassMutater
getDescription
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
toString
verify
trace
trace



REV

- PROVIDER: REVMethodVisitorProvider [1]
- VERIFIER: ListAPIVerifier [1]
- DESCRIPTION: String [1]
INIT: String [1]
CLINIT: String [1]
JAVA: String [1]
THIS: String [1]

createCountingClassMutater(): AbstractClassMutater
createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int)
+ getDescription(): String
+ getMutationPoints(in bytecode: byte): IMutationPoint
+ mutate(in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate(in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
getReaderFlags(): int
getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment(in environment: IEnvironment)
getEnvironment(): IEnvironment
+ toString(): String
createCountingClassMutater(): AbstractClassMutater
createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int)

createCountingClassMutater
createClassMutater
getDescription
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
toString
verify
trace
trace

DUL

- PROVIDER: MethodVisitorProvider [1]

- VERIFIER: TypeVerifier [1]

- DESCRIPTION: String [1]

INIT: String [1]

CLINIT: String [1]

JAVA: String [1]

THIS: String [1]

createCountingClassMutater(): AbstractClassMutater
createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutant
+ getDescription(): String
+ getMutationPoints(in bytecode: byte): IMutationPoint
+ mutate(in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutant
+ mutate(in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
getReaderFlags(): int
getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment(in environment: IEnvironment)
getEnvironment(): IEnvironment
+ toString(): String
createCountingClassMutater(): AbstractClassMutater
createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutant

createCountingClassMutater

createClassMutater

getDescription

getMutationPoints

mutate

mutate

mutate

createClassWriter

getReaderFlags

getWriterFlags

getName

getDescription

setEnvironment

getEnvironment

toString

verify

trace

trace

- PROVIDER: MethodVisitorProvider [1]
- VERIFIER: TypeVerifier [1]
- DESCRIPTION: String [1]
INIT: String [1]
CLINIT: String [1]
JAVA: String [1]
THIS: String [1]

createCountingClassMutater(): AbstractClassMutater
createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int,
+ getDescription(): String
+ getMutationPoints(in bytecode: byte): IMutationPoint
+ mutate(in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int):
+ mutate(in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
getReaderFlags(): int
getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment(in environment: IEnvironment)
getEnvironment(): IEnvironment
+ toString(): String
createCountingClassMutater(): AbstractClassMutater
createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, i

createCountingClassMutater
createClassMutater
getDescription
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
toString
verify
trace
trace

thIndex: int): AbstractClassMutater

Bytecode

Index: int): AbstractClassMutater

- PROVIDER: MethodVisitorProvider [1]

- VERIFIER: TypeVerifier [1]

- DESCRIPTION: String [1]

INIT: String [1]

CLINIT: String [1]

JAVA: String [1]

THIS: String [1]

in mutantIndex: int): AbstractClassMutater

: IMutantBytecode
ode

in mutantIndex: int): AbstractClassMutater

createCountingClassMutater(): AbstractClassMutater
createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int): AbstractClassMutater
+ getDescription(): String
+ getMutationPoints(in bytecode: byte): IMutationPoint
+ mutate(in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutationPoint
+ mutate(in bytecode: byte, in mutationPoint: IMutationPoint): IMutationPoint
getReaderFlags(): int
getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment(in environment: IEnvironment)
getEnvironment(): IEnvironment
+ toString(): String
createCountingClassMutater(): AbstractClassMutater
createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int): AbstractClassMutater

createCountingClassMutater
createClassMutater
getDescription
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
toString
verify
trace
trace

dex: int, in mutantIndex: int): AbstractClassMutater

index: int): IMutantBytecode
:antBytecode

tex: int, in mutantIndex: int): AbstractClassMutater

- cache: Map [1]
INIT: String [1]
CLINIT: String [1]
JAVA: String [1]
THIS: String [1]

+ getDescription(): String
createCountingClassMutater(): AbstractClassMutater
createClassMutater(in classWriter: ClassVisitor, in mutatio
mutate(in mn: MethodNode, in cn: ClassNode, in cm: Al
countVarReplacements(in descLeft: String, in left: Abstrac
getVarReplacement(in descLeft: String, in left: AbstractIn
- getVarReplacemnts(in descLeft: String, in left: AbstractIn
- isSameVar(in node: AbstractInsnNode, in other: AbstractIn
- getCompatibleVars(in desc: String, in mn: MethodNode,
- isAssignable(in leftDesc: String, in rightDesc: String): bo
- getDesc(in node: AbstractInsnNode, in mn: MethodNode
+ getMutationPoints(in bytecode: byte): IMutationPoint
+ mutate(in bytecode: byte, in mutationPointIndex: int, in
+ mutate(in bytecode: byte, in mutationPoint: IMutationPo
getReaderFlags(): int
getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment(in environment: IEnvironment)
getEnvironment(): IEnvironment
+ toString(): String
createCountingClassMutater(): AbstractClassMutater
createClassMutater(in classWriter: ClassVisitor, in mutatio

getDescription
createCountingClassMutater
createClassMutater
mutate
countVarReplacements
getVarReplacement
getVarReplacemnts
isSameVar
getCompatibleVars
isAssignable
getDesc
ClassMutater
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
toString
verify
trace
trace



PRV

```
onPointIndex: int, in mutantIndex: int): AbstractClassMutater  
bstractClassMutater)  
:tInsnNode, in right: AbstractInsnNode, in mn: MethodNode, in cn: ClassNode): int  
snNode, in right: AbstractInsnNode, in mn: MethodNode, in cn: ClassNode, in mutantIndex: int): AbstractInsnNode  
nNode, in right: AbstractInsnNode, in mn: MethodNode, in cn: ClassNode): List  
nsnNode): boolean  
in cn: ClassNode): List  
ean  
): String
```

```
: mutantIndex: int): IMutantBytecode  
int): IMutantBytecode
```

```
onPointIndex: int, in mutantIndex: int): AbstractClassMutater
```

```
# INIT: String [1]
# CLINIT: String [1]
# JAVA: String [1]
# THIS: String [1]

+ getDescription(): String
# checkMethod( in className: String, in access: int, in name: String, in desc: String, in signature: String, in exceptions: String): bool
- hasOverloadingMethods( in className: String, in name: String, in desc: String): boolean
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
+ getMutationPoints( in bytecode: byte): IMutationPoint
+ mutate( in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode
+ mutate( in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
# getReaderFlags(): int
# getWriterFlags(): int
+ getName(): String
+ getDescription(): String
+ setEnvironment( in environment: IEnvironment)
# getEnvironment(): IEnvironment
+ toString(): String
# createCountingClassMutater(): AbstractClassMutater
# createClassMutater( in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater
```

```
getDescription
checkMethod
hasOverloadingMethods
createCountingClassMutater
createClassMutater
ClassMutater
getMutationPoints
mutate
mutate
mutate
createClassWriter
getReaderFlags
getWriterFlags
getName
getDescription
setEnvironment
getEnvironment
toString
verify
trace
trace
```

	<pre> - cache: Map [1] # INIT: String [1] # CLINIT: String [1] # JAVA: String [1] # THIS: String [1] </pre>
lean	<pre> + getDescription(): String # checkMethod(in access: int, in className: String, in name: String, in desc: String, in signature: String) # countMethodInsnReplacements(in node: MethodInsnNode): int # getMethodInsnReplacement(in node: MethodInsnNode, in mutantIndex: int): String - getMethodInsnReplacements(in methodInst: MethodInsnNode): String - isReplacement(in desc: String, in replacement: String): boolean # createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater # createCountingClassMutater(): AbstractClassMutater + getMutationPoints(in bytecode: byte): IMutationPoint + mutate(in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode + mutate(in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode # getReaderFlags(): int # getWriterFlags(): int + getName(): String + getDescription(): String + setEnvironment(in environment: IEnvironment) # getEnvironment(): IEnvironment + toString(): String # createCountingClassMutater(): AbstractClassMutater # createClassMutater(in classWriter: ClassVisitor, in mutationPointIndex: int, in mutantIndex: int): AbstractClassMutater </pre>
	<pre> getDescription checkMethod countMethodInsnReplacements getMethodInsnReplacement getMethodInsnReplacements isReplacement createClassMutater createCountingClassMutater ClassMutater getMutationPoints mutate mutate mutate createClassWriter getReaderFlags getWriterFlags getName getDescription setEnvironment getEnvironment toString verify trace trace </pre>

ig, in exceptions: String): boolean

actClassMutater

ctClassMutater

DifferentOperatorsStrategy

+ create(in foms: IMutant, in operators: IMutationOperator): IMutant
- areNonClassicOperatorsDifferent(in fom1: IMutant, in fom2: IMutant): boolean
- areClassicOperatorsDifferent(in fom1: IMutant, in fom2: IMutant): boolean
- areOperatorsClassicAndNonClassic(in fom1: IMutant, in fom2: IMutant): boolean
- isOperatorClassic(in fom: IMutant): boolean
- areOperatorsFromTheSameGroup(in fom1: IMutant, in fom2: IMutant): boolean
- getClassicOperatorGroup(in fom: IMutant): String
- getNonClassicOperatorName(in fom: IMutant): String
+ create(in foms: IMutant, in operators: IMutationOperator): IMutant
+ findNearestMutationPoint(in fom: IMutant, in bytecode: byte, in mutationCount: int): IMutant
+ create()
+ create(in null: <Undefined>)
+ create(): IMutant
+ create(): IMutant
+ create(): IMutant
+ create(in null: <Undefined>): IMutant
+ create(in foms: <Undefined>): IMutant
+ create(in foms: IMutant): IMutant
+ create(in foms: IMutant): IMutant
+ create(in foms: IMutant): IMutant
+ create(in foms: IMutant, in null: <Undefined>): IMutant
+ create(in foms: IMutant, in operators: <Undefined>): IMutant
+ create(in foms: IMutant, in operators: IMutationOperator): IMutant
+ create(in foms: IMutant, in operators: IMutationOperator): IMutant
+ create(in foms: IMutant, in operators: IMutationOperator): IMutant

create
areNonClassicOperatorsDifferent
areClassicOperatorsDifferent
areOperatorsClassicAndNonClassic
isOperatorClassic
areOperatorsFromTheSameGroup
getClassicOperatorGroup
getNonClassicOperatorName
findNearestMutationPoint

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Operators: IMutationOperator): MutationInfo

- LOGGER: Logger [1]
- serialVersionUID: long [1]
- somFactory: SomFactory [1]
- algorithm: String [1]

«Create» + SomMutationWork(in clientId: long, in retries: int, in
mutate(): IMutant
«Create» + MutationWork(in clientId: long, in retries: int, in resi
+ run(in workspace: Object): IClassMutationResult
collectSummaryData(): MutationSummary
computeInitialTestsDuration()
init(in workspace: String)
initReset()
mutate(): IMutant
getBytecode(): byte
generateFoms(in bytecode: byte): IMutant
getEvaluator(): IMutantEvaluator
+ getStatistic(): IDurationStatistic
+ setStatistic(in statistic: IDurationStatistic)
+ getKind(): ClassKind
+ setKind(in kind: ClassKind)
+ getTargetClass(): ITargetClass
+ getOperators(): IMutationOperator
+ setOperators(in operators: IMutationOperator)
+ getCache(): IBytecodeCache
+ setCache(in cache: IBytecodeCache)
+ getResultFormatter(): MutationResultFormatter
+ setResultFormatter(in resultFormatter: MutationResultFormatte
+ getSerialVersionUID(): long
+ getClasspath(): String
+ getEnvFactory(): IEnvironmentFactory
+ getTesterFactory(): ITesterFactory
+ getOperatorsFactory(): IMutationOperatorsFactory
+ getMaxInfiniteLoopGuardTimeout(): long
+ getTester(): ITes
+ setTester(in tester: ITes
+ setEvaluator(in evaluator: IMutantEvaluator)
+ getLOGGER(): Logger
+ getWorkspace(): String
«Create» + AbstractWork(in clientId: long, in retries: int)
+ getClientId(): long
«Synchronized» + canRetry(): boolean
+ getRetries(): int
+ getSerialVersionUID(): long
+ getClientId()
+ getClientId(in null: <Undefined>)
+ run()
+ run(in null: <Undefined>)
+ run(): IClassMutationResult
+ run(in null: <Undefined>): IClassMutationResult
+ run(in param: <Undefined>): IClassMutationResult
+ run(in param: Object): IClassMutationResult
+ canRetry()
+ canRetry(in null: <Undefined>)

SomMutationWork
mutate
MutationWork
run

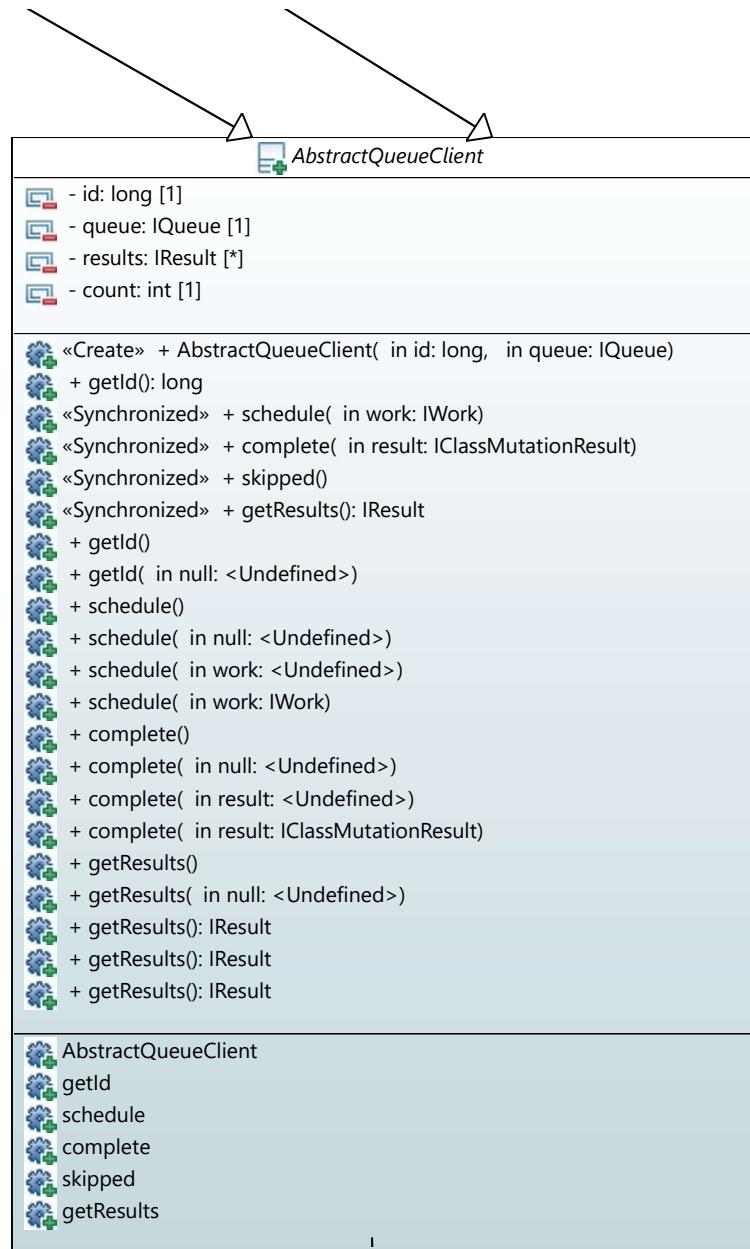
\resultFormatter: MutationResultFormatter, in targetClass: ITargetClass, in classpath: String, in testerFactory: ITes
ultFormatter: MutationResultFormatter, in targetClass: ITargetClass, in classpath: String, in testerFactory: ITes
erFactory, in envFactory: IEnvirc

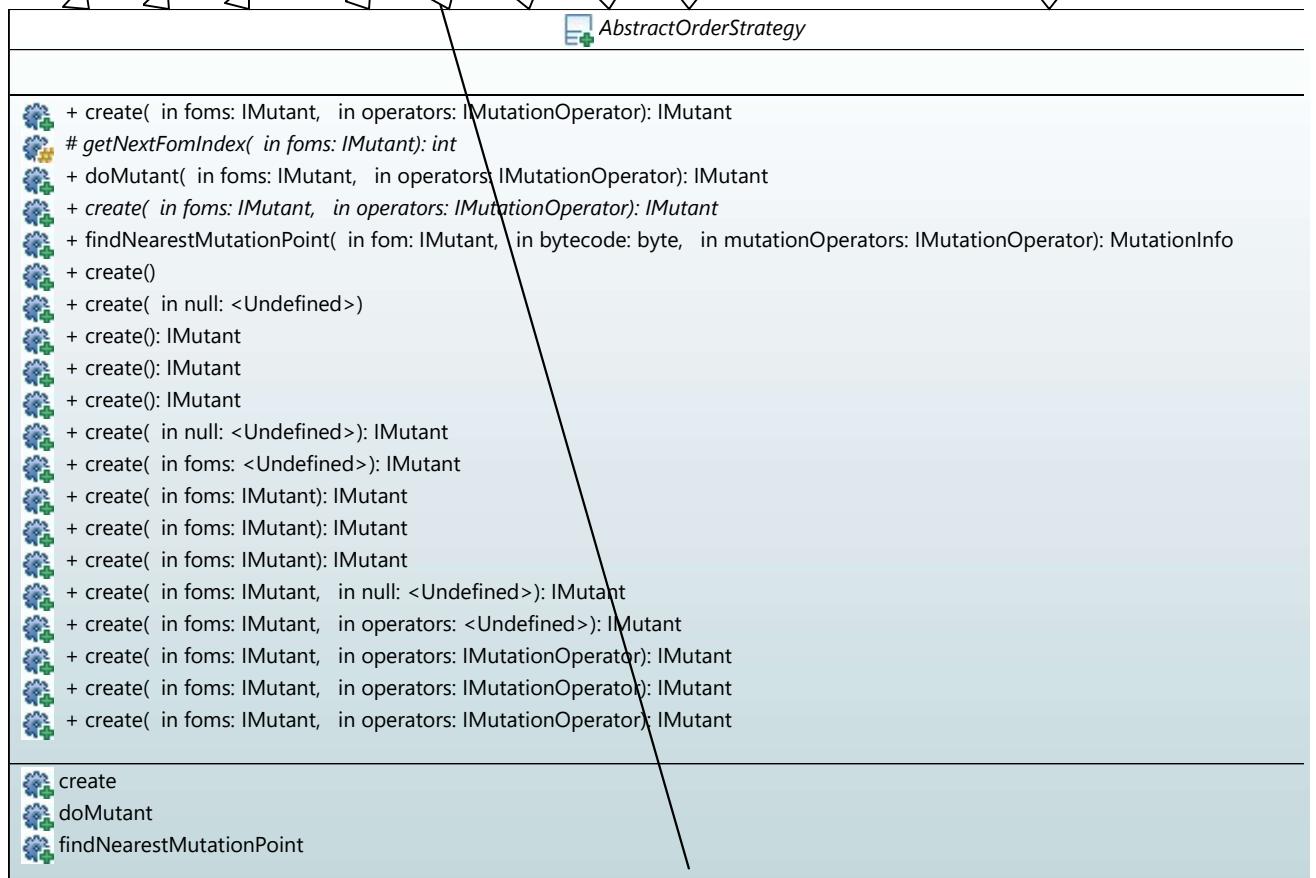
:r)

ork

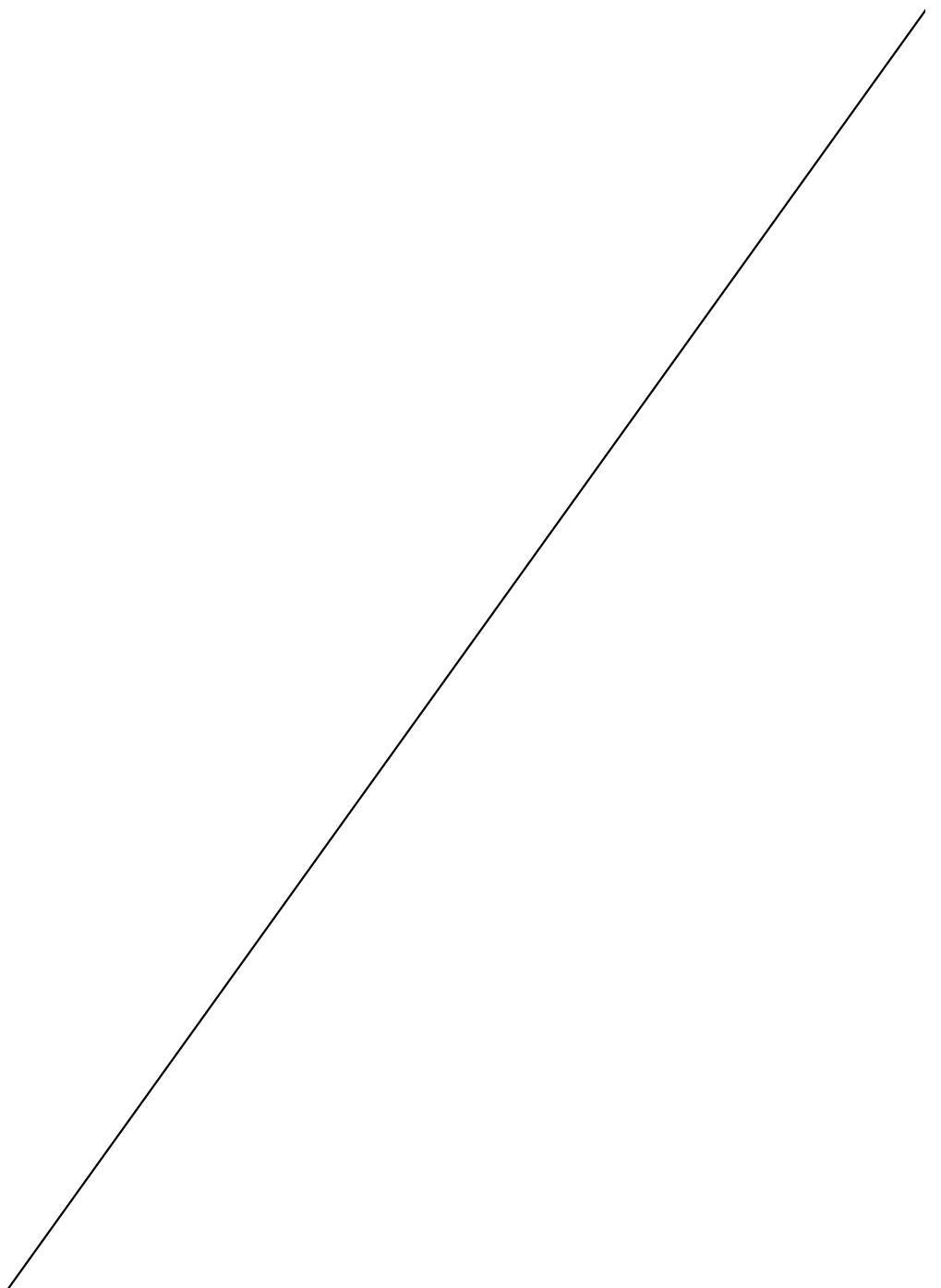
onmentFactory, in operatorsFactory: IMutationOperatorsFactory, in maxInfiniteLoopGuardTimeout: long, in somFactory: SomFactory, in algorith
entFactory, in operatorsFactory: IMutationOperatorsFactory, in maxInfiniteLoopGuardTimeout: long)

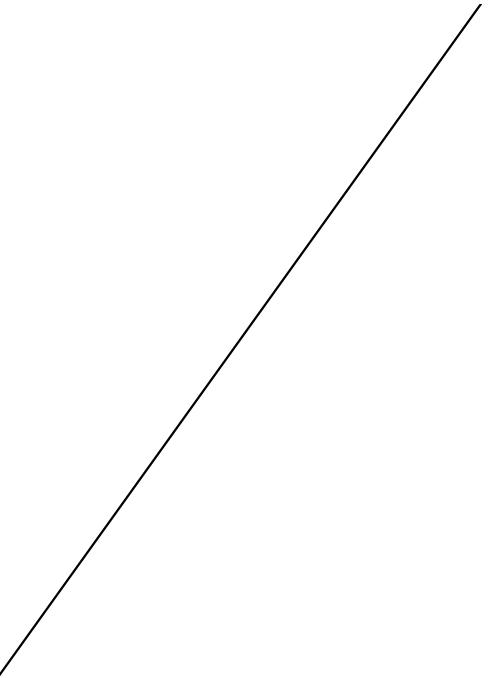
n: String)



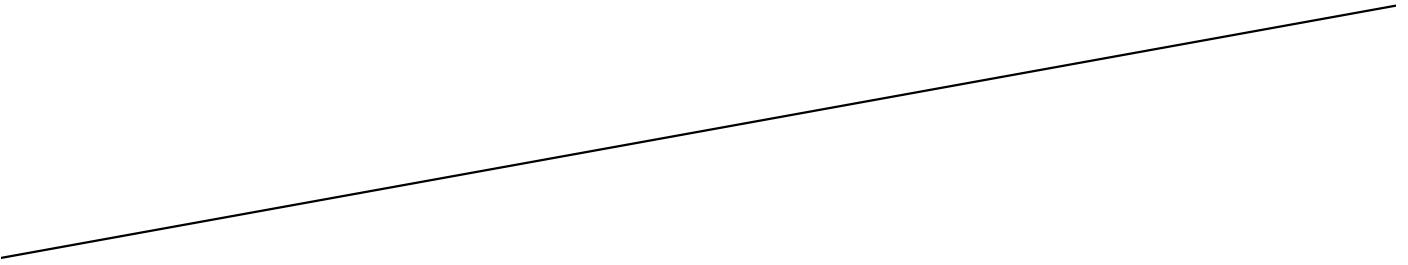


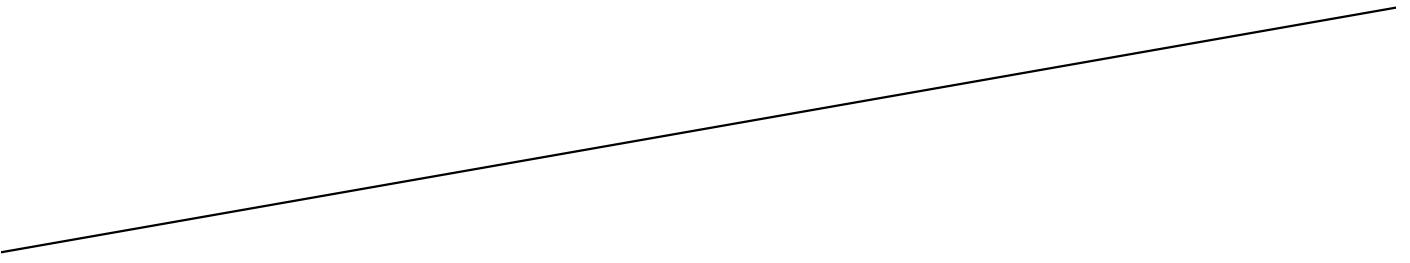


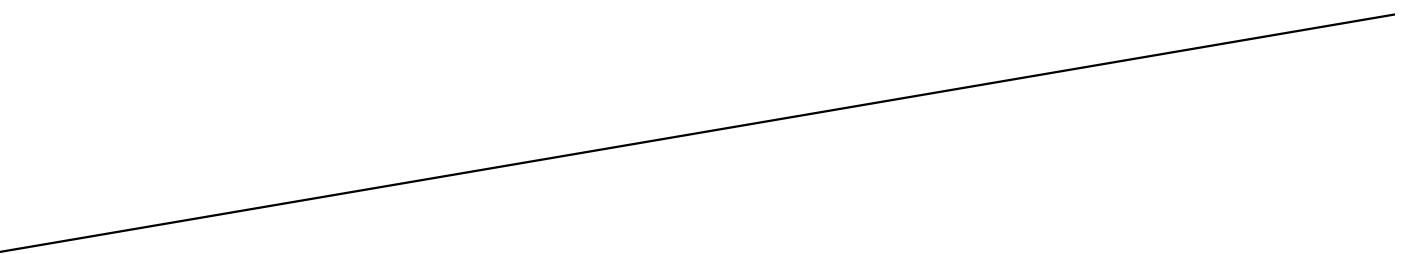


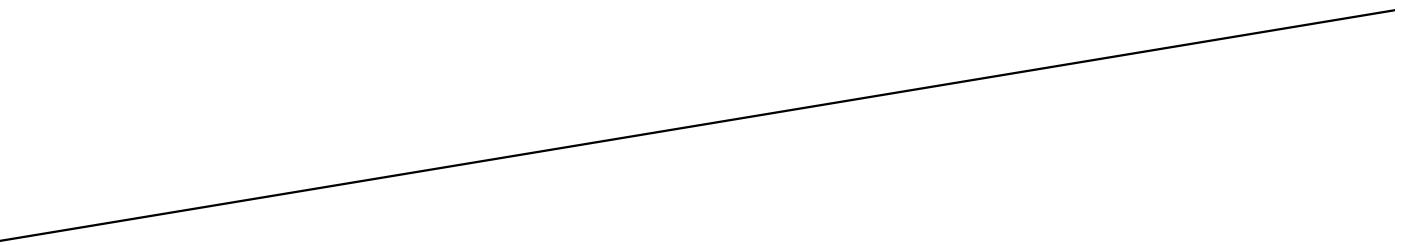


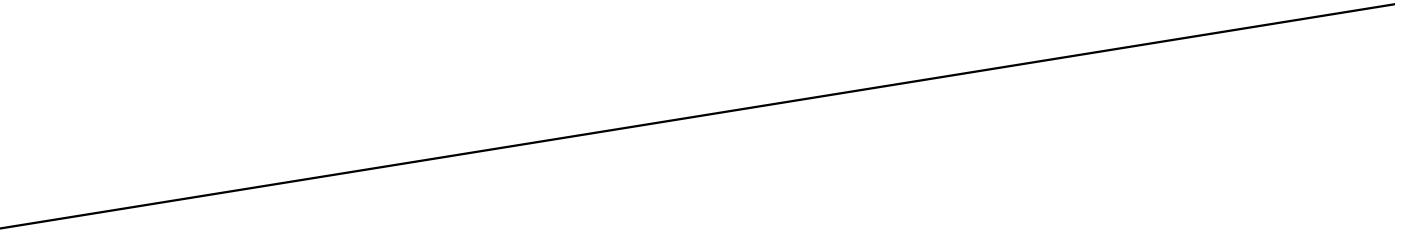


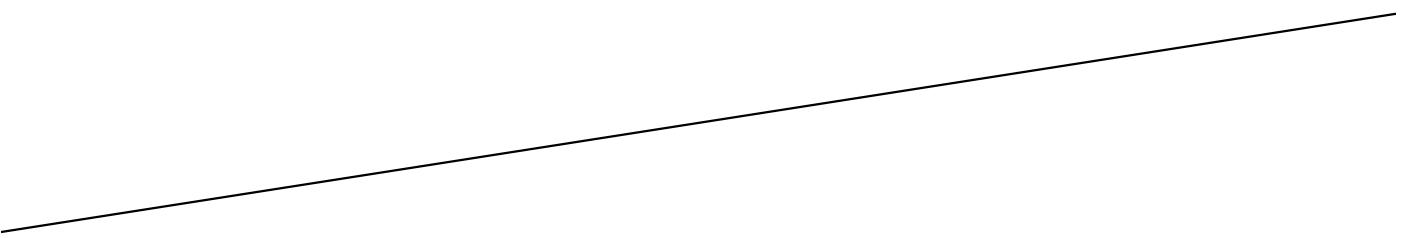


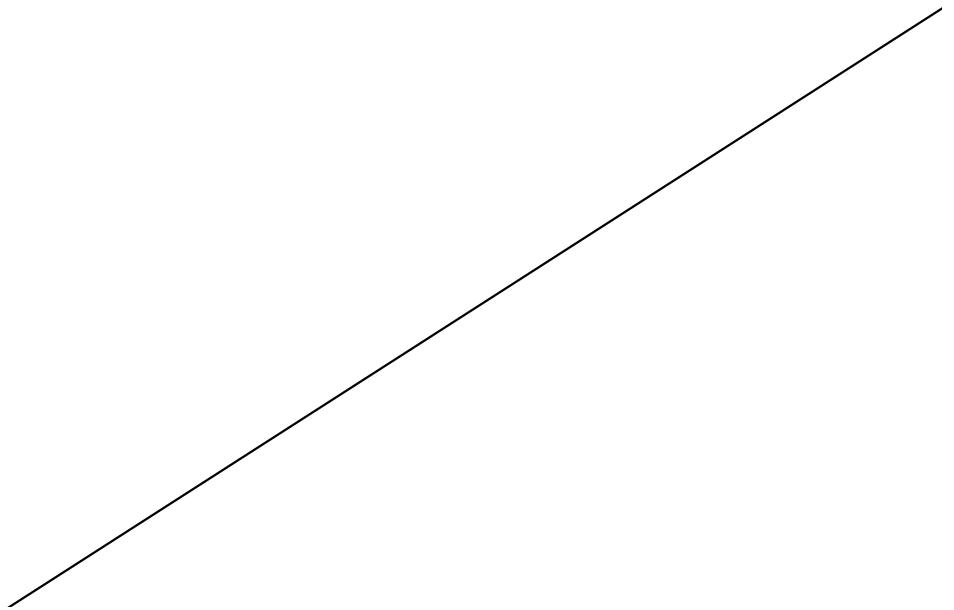
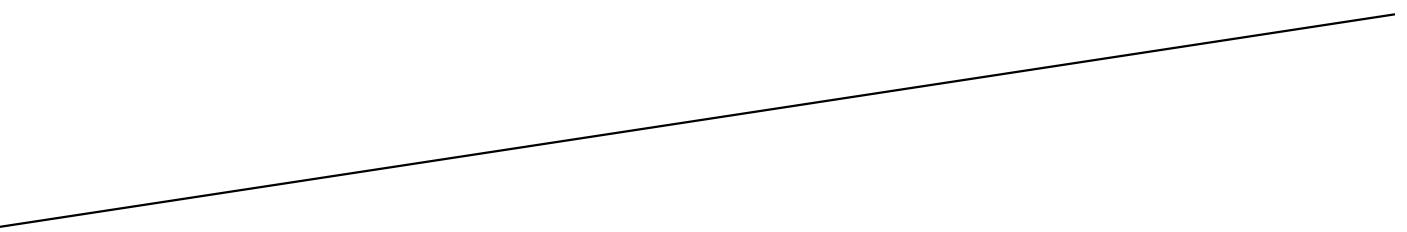


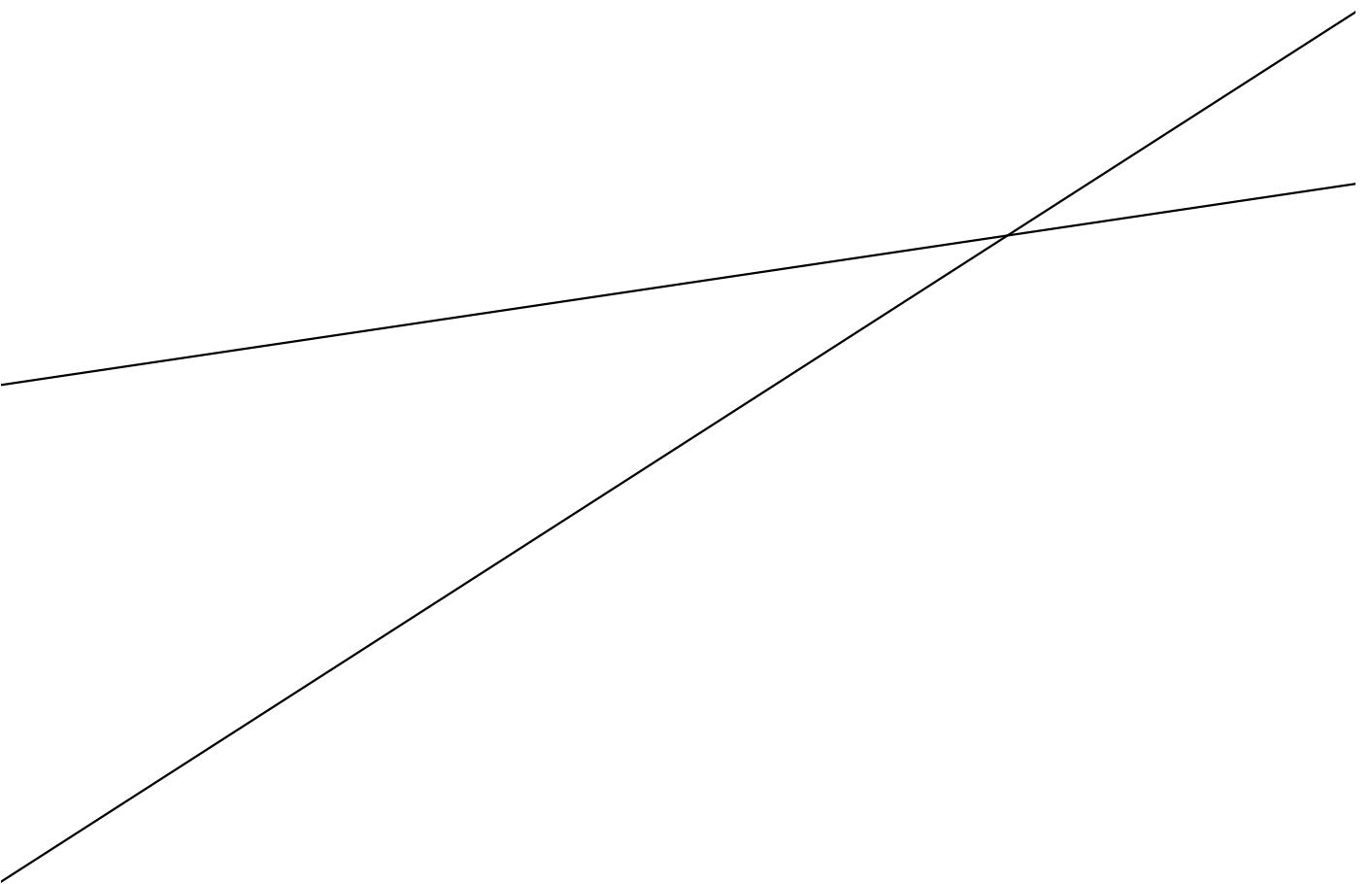


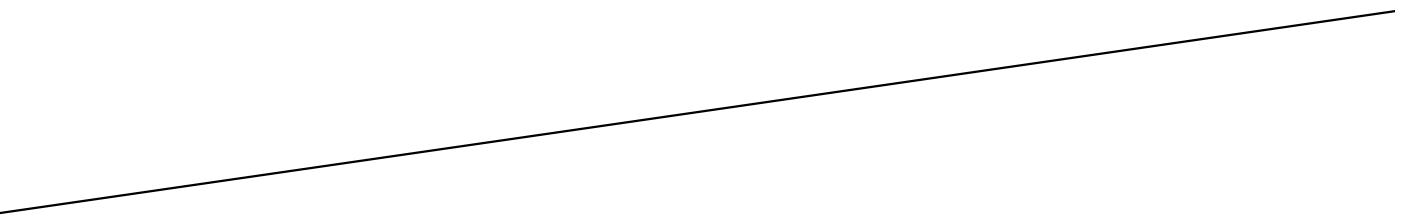
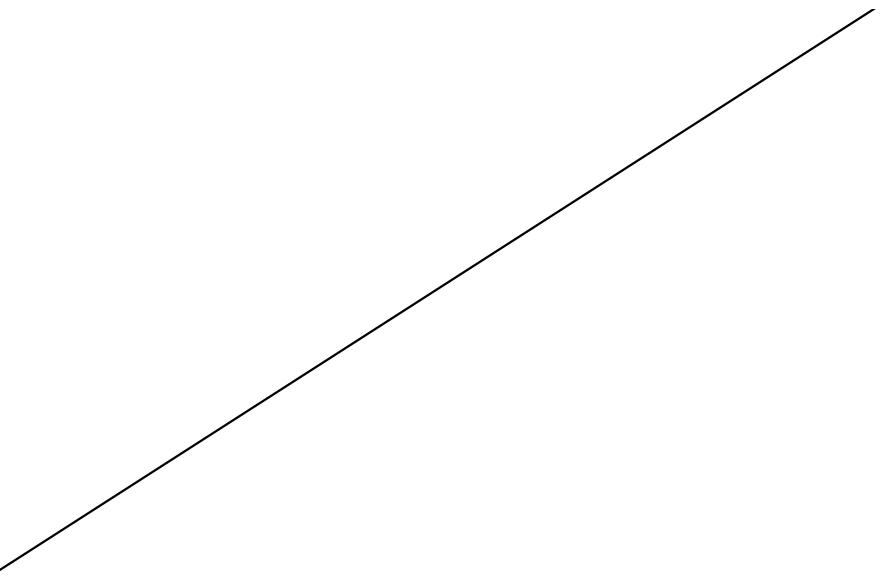


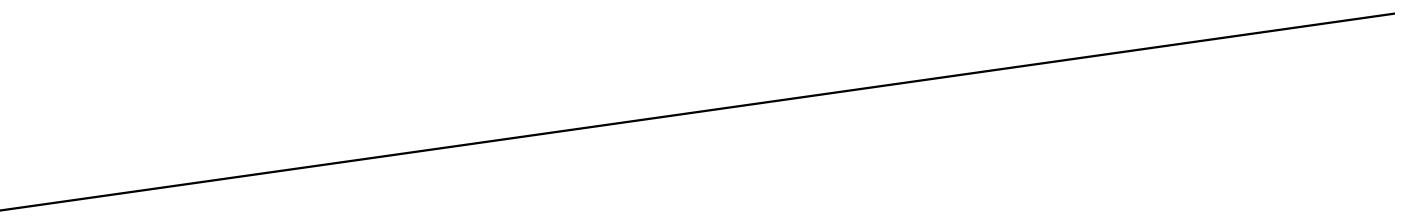


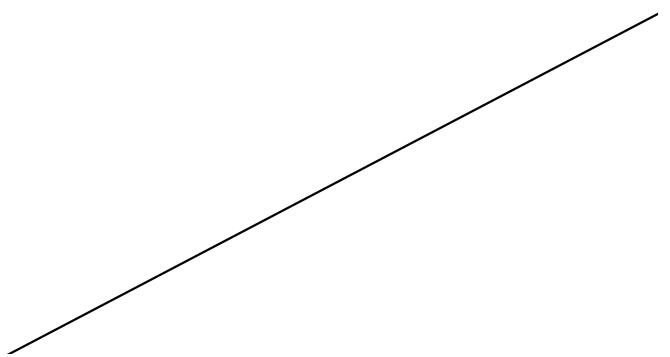
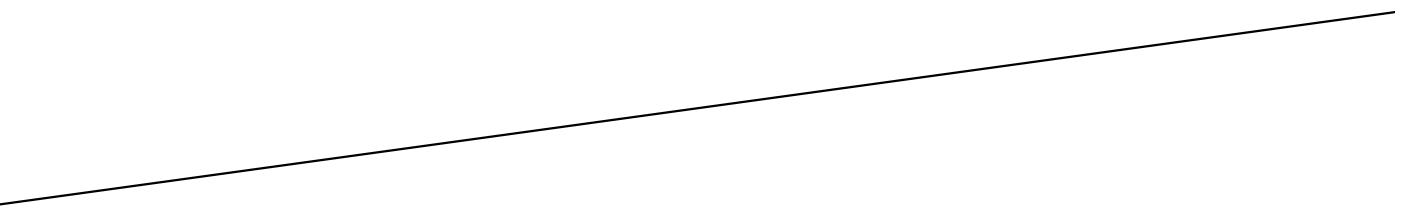


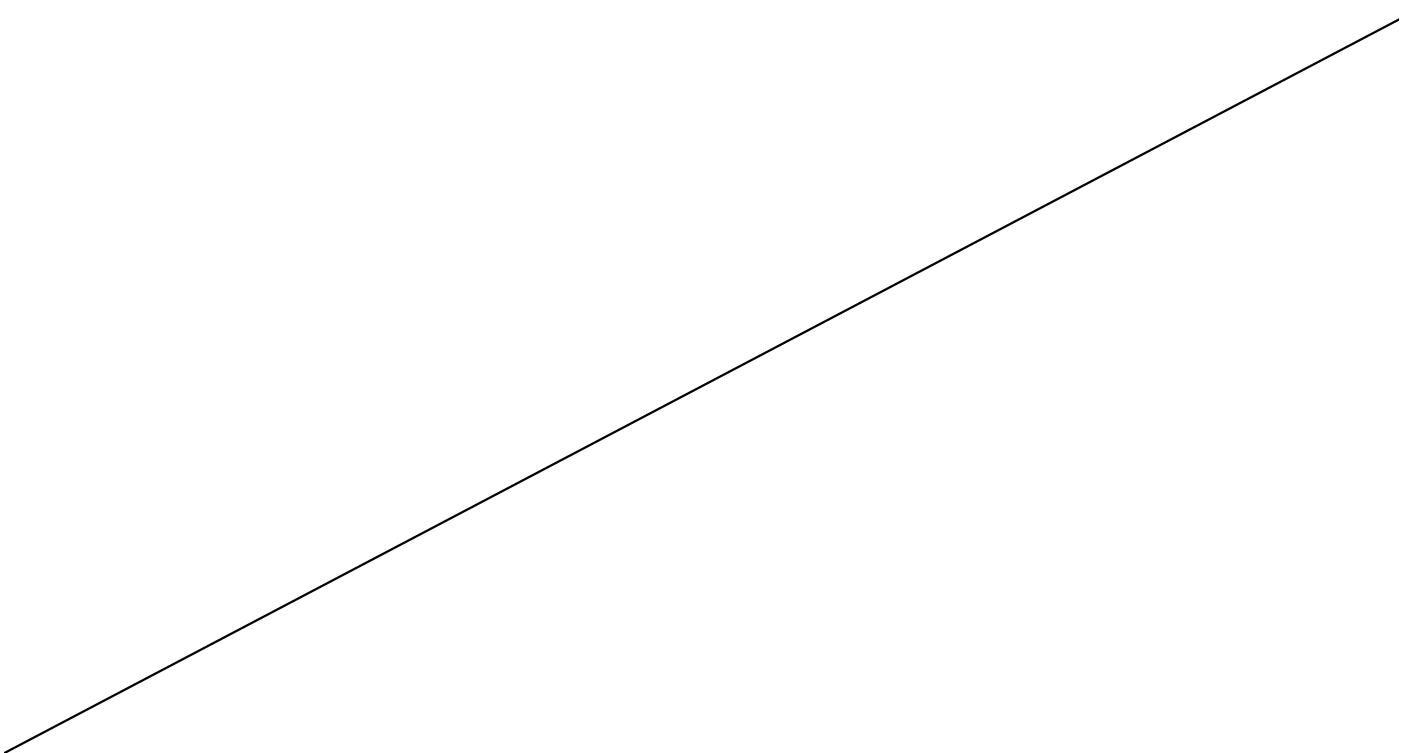
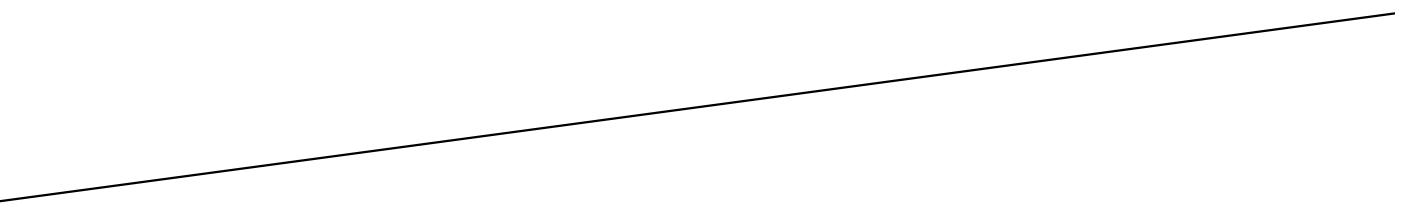


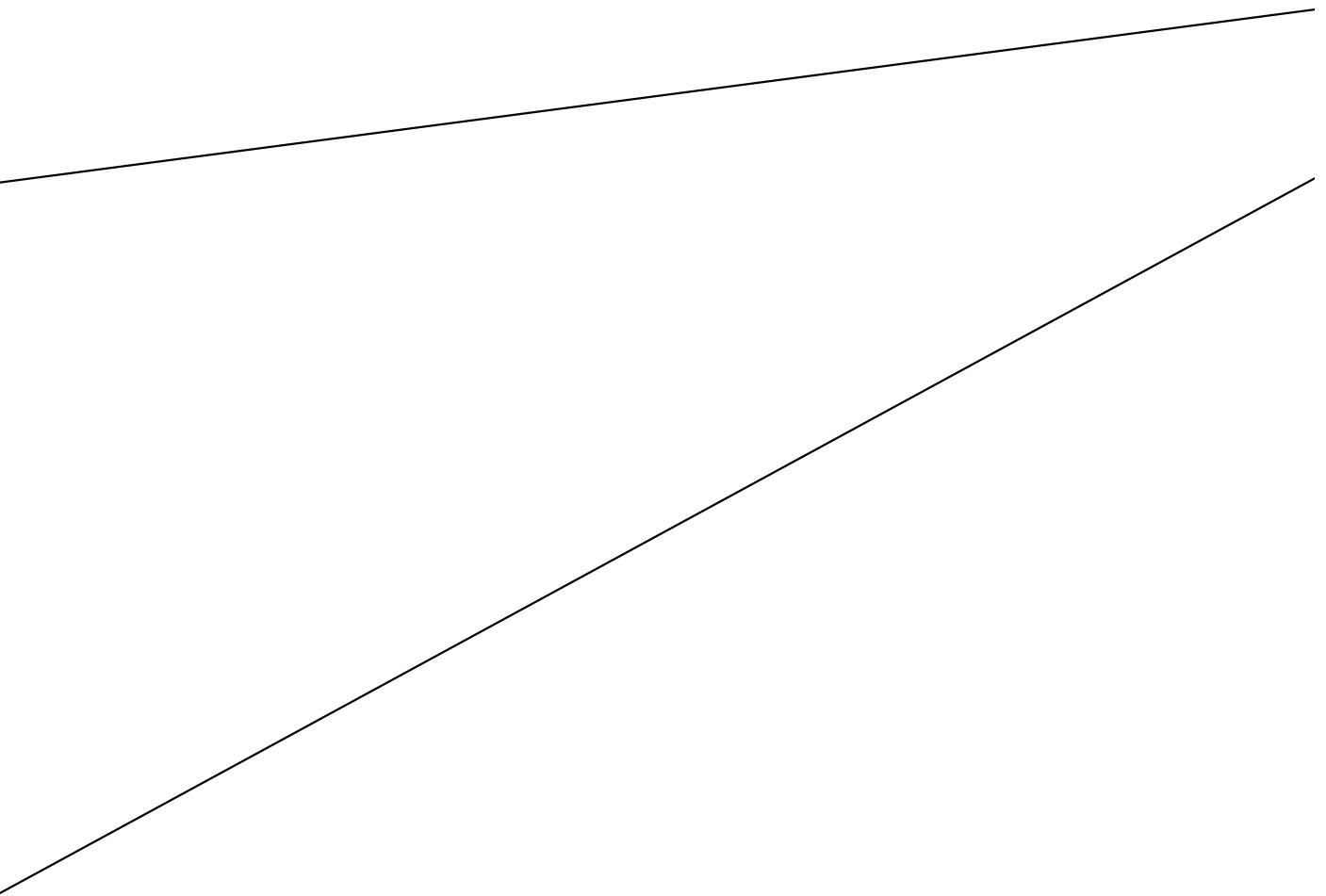


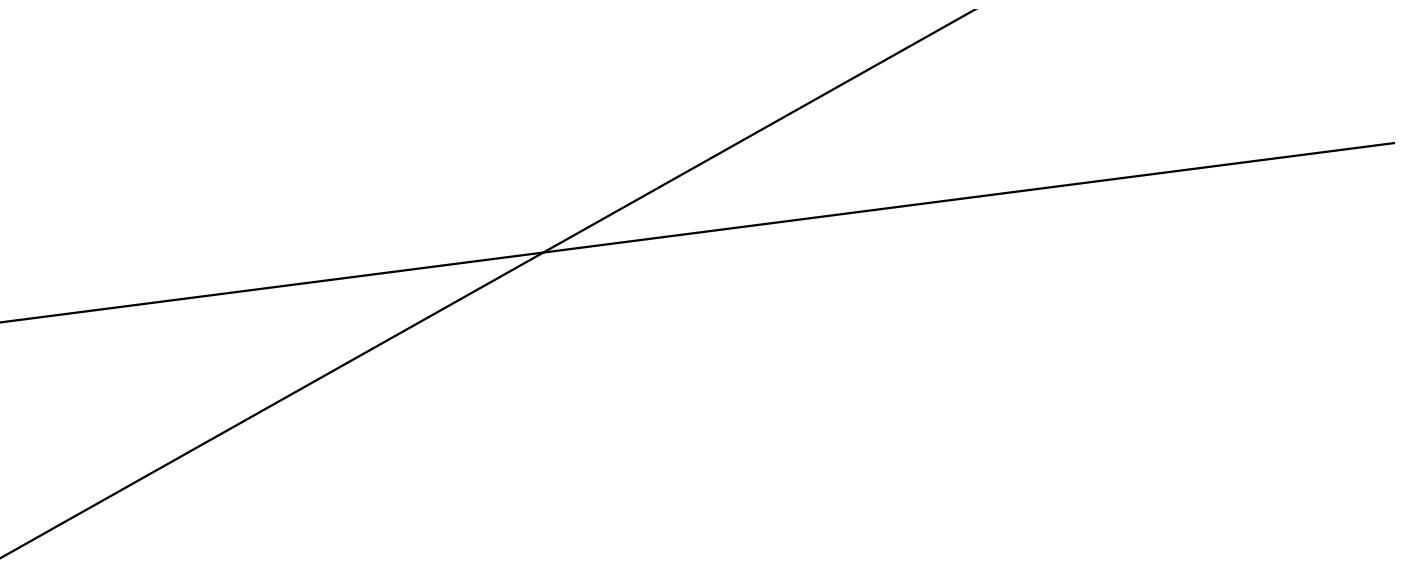


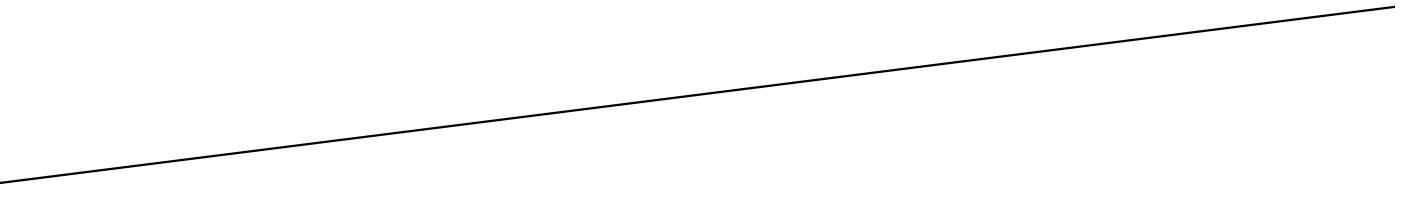


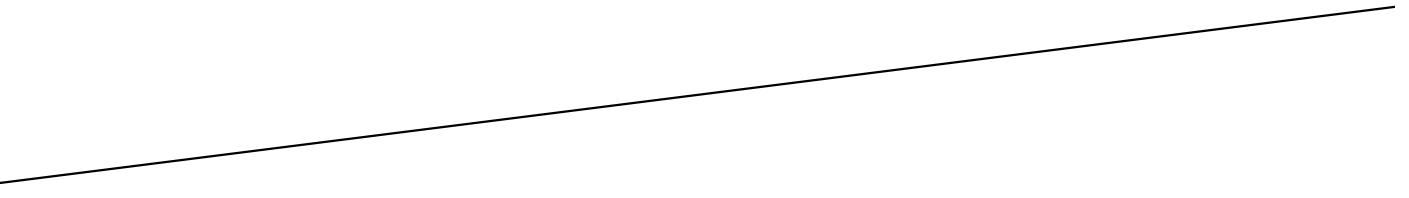


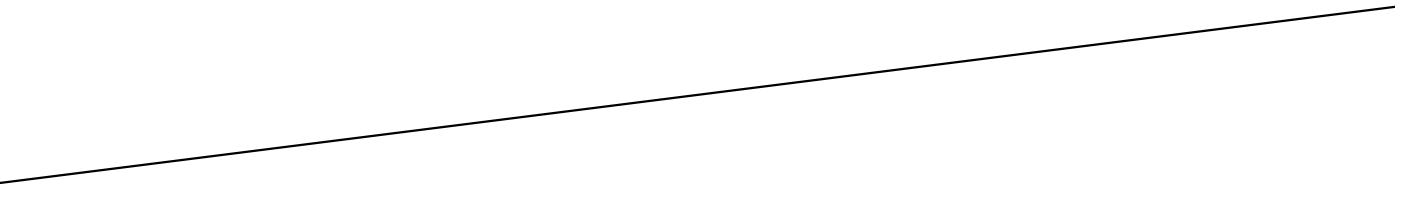


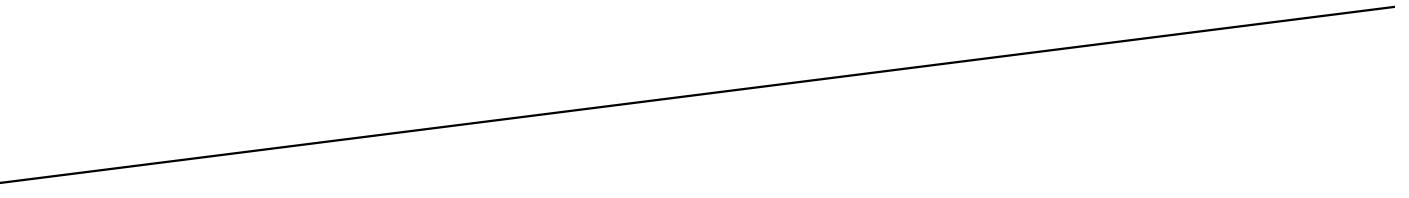


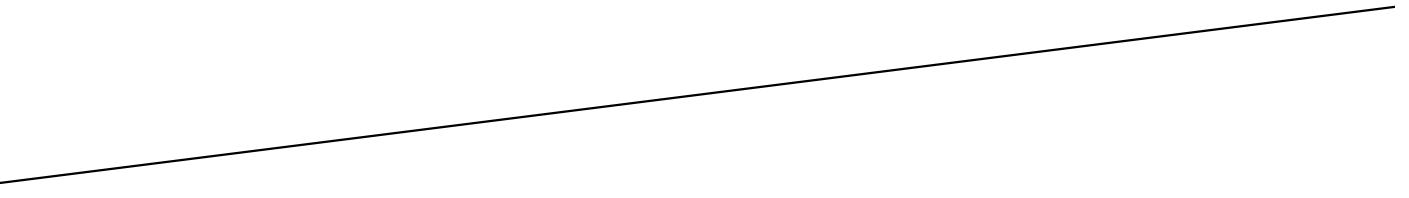


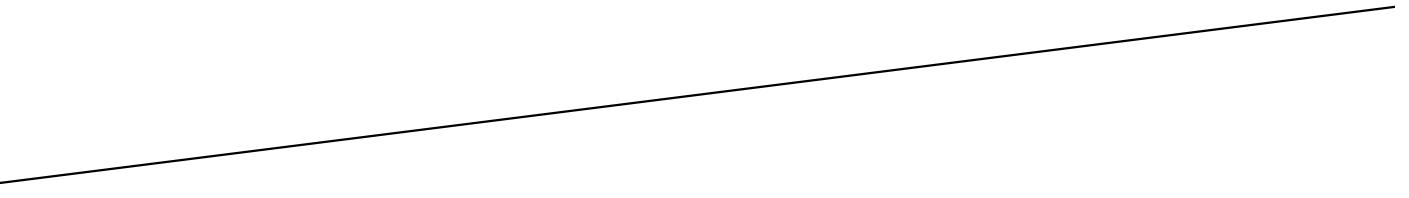


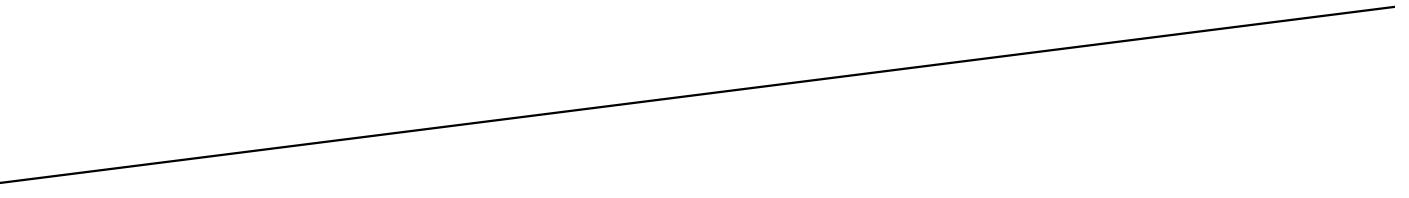


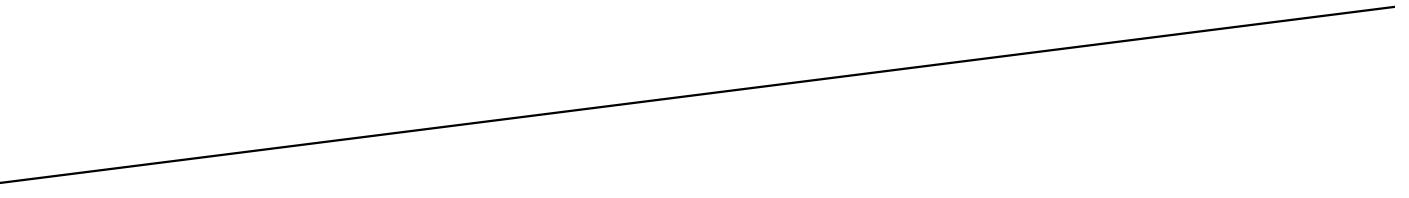


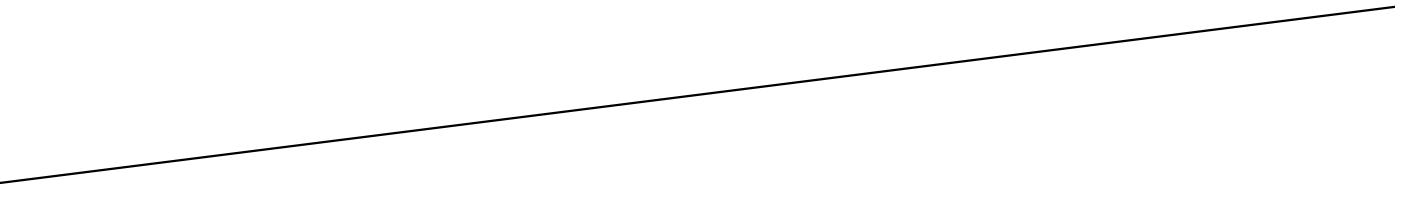


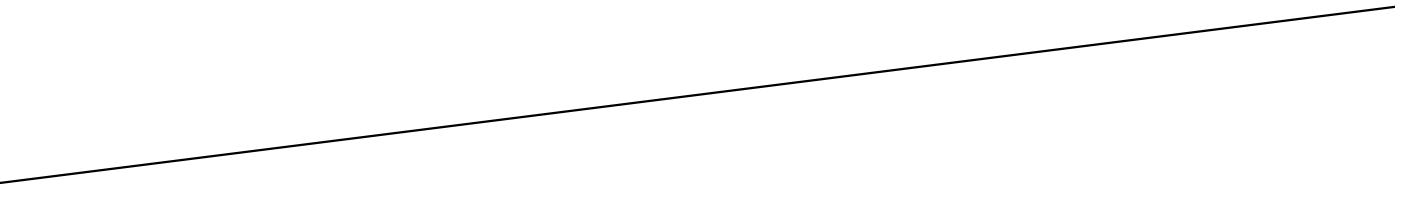


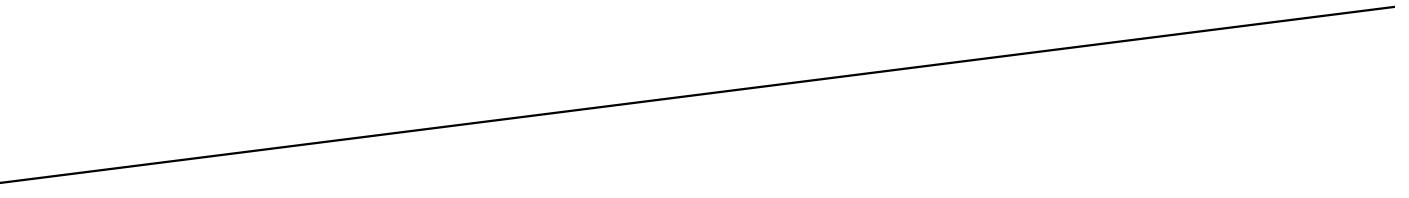


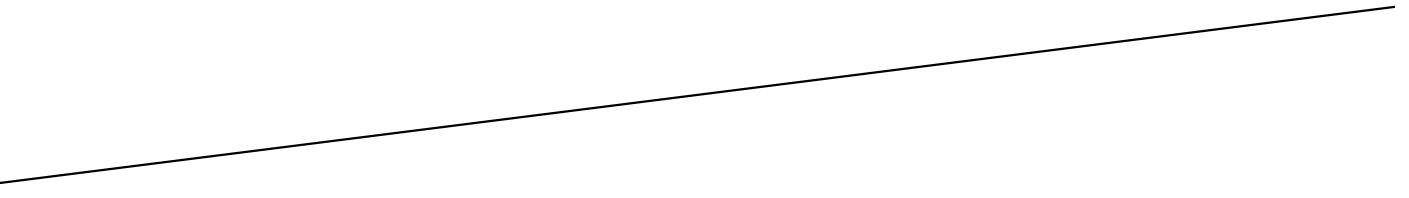


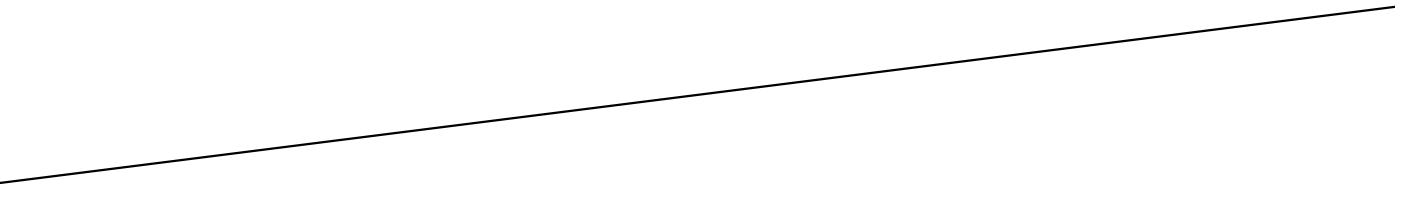


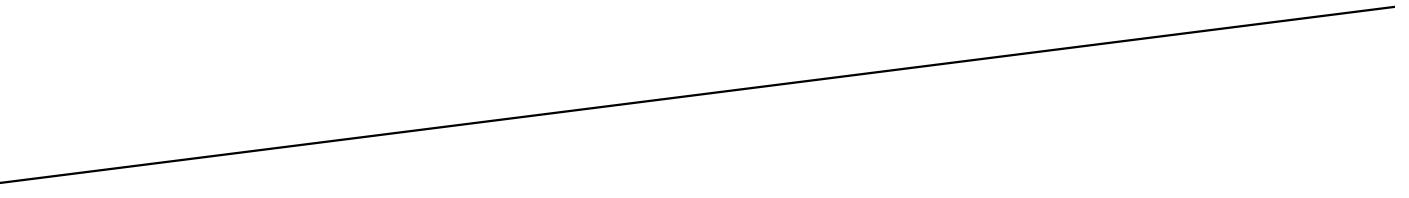


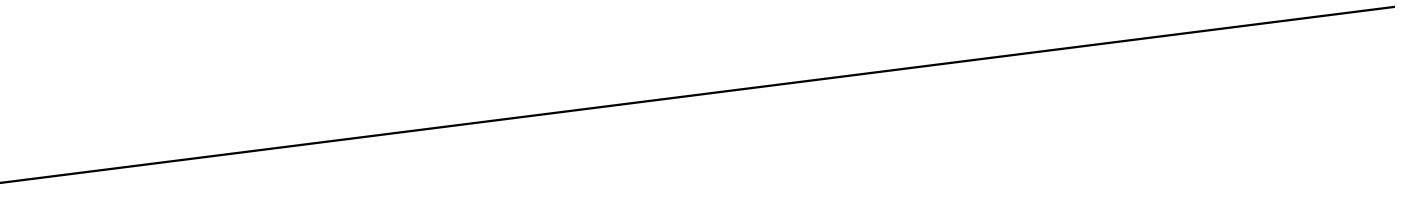


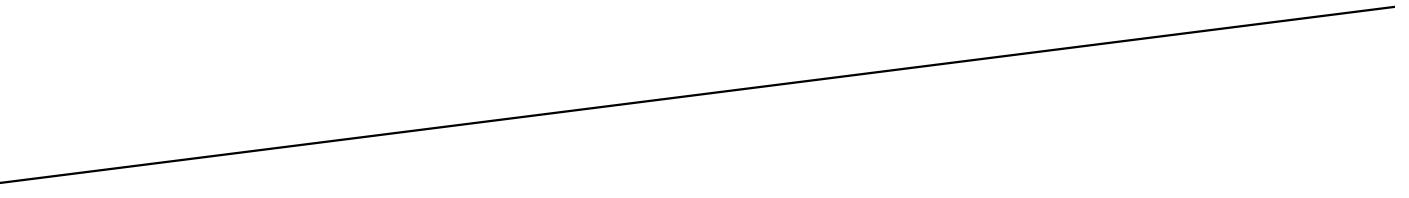


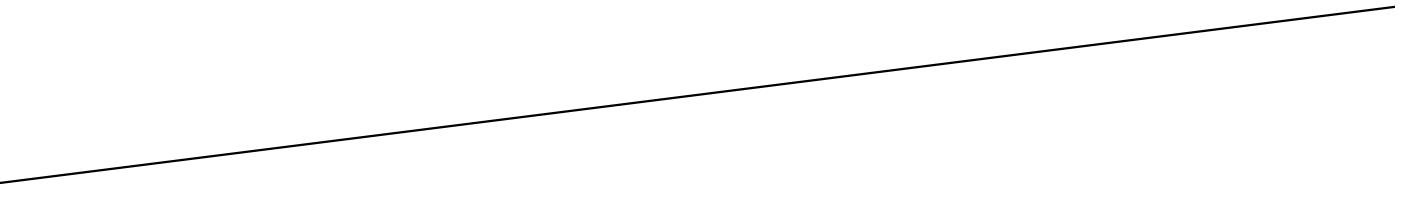


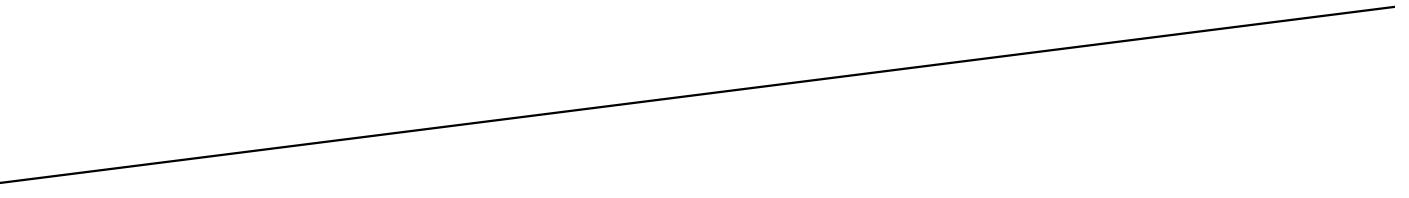


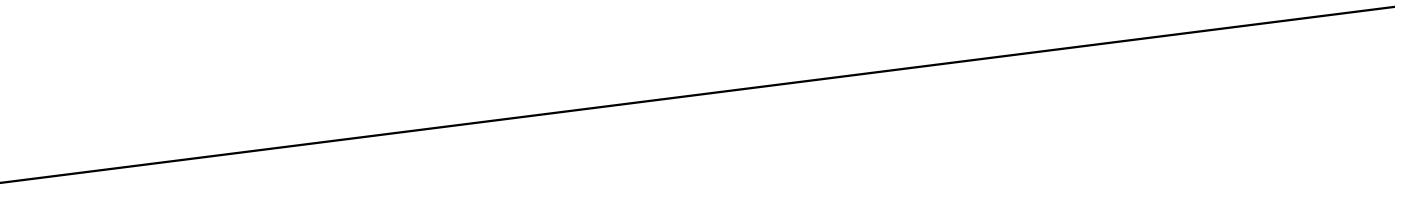


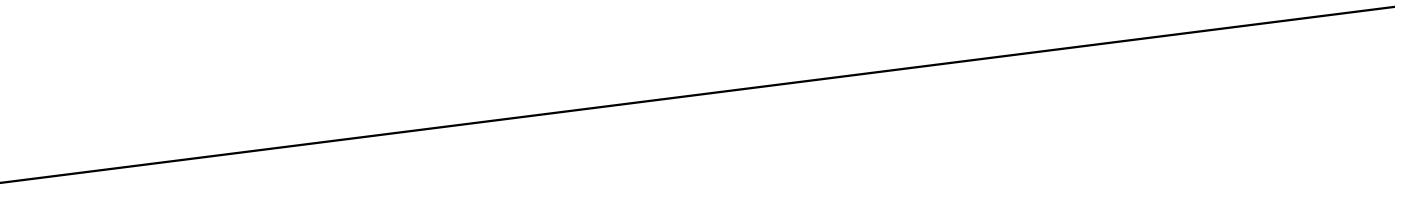


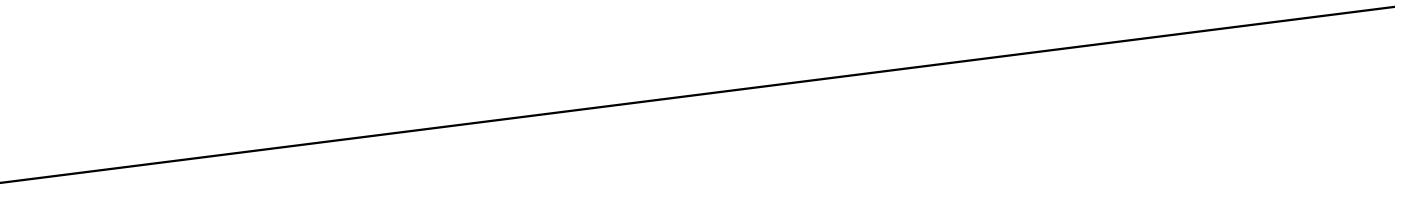


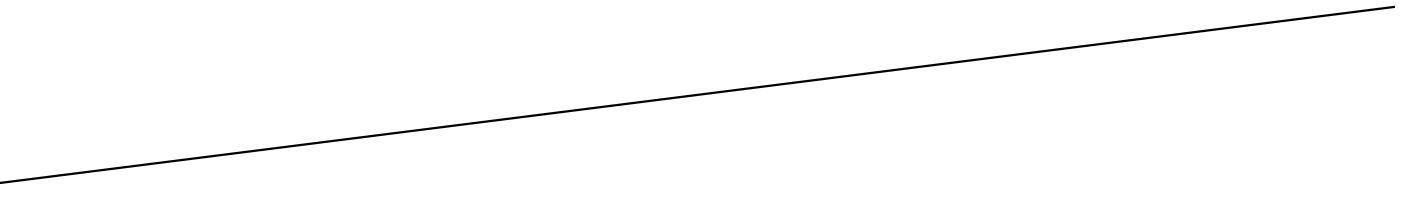


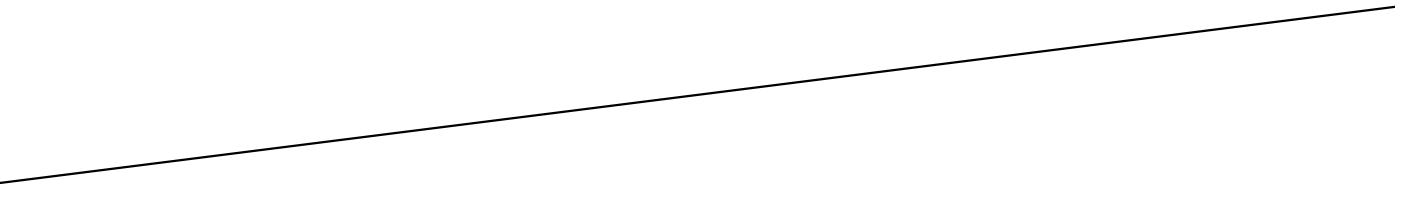


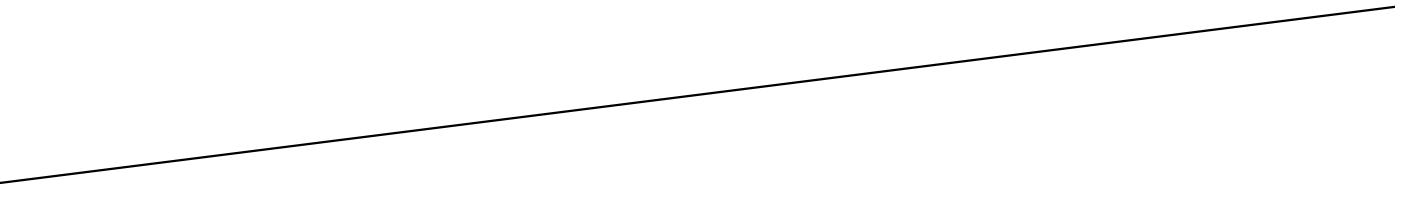


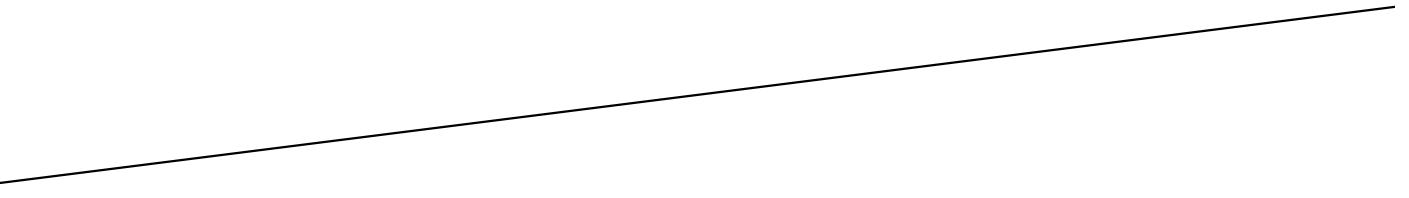


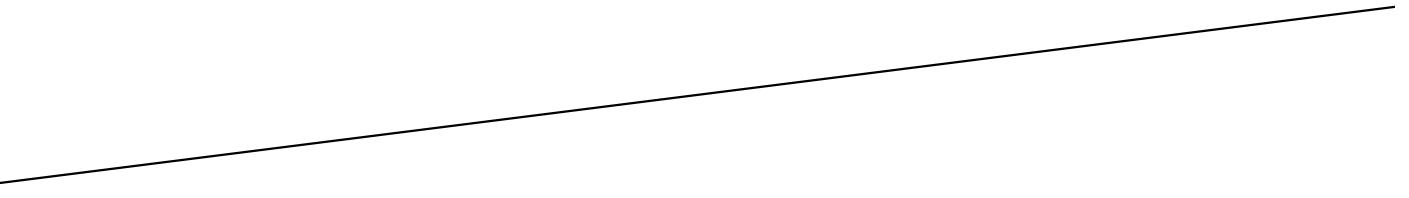


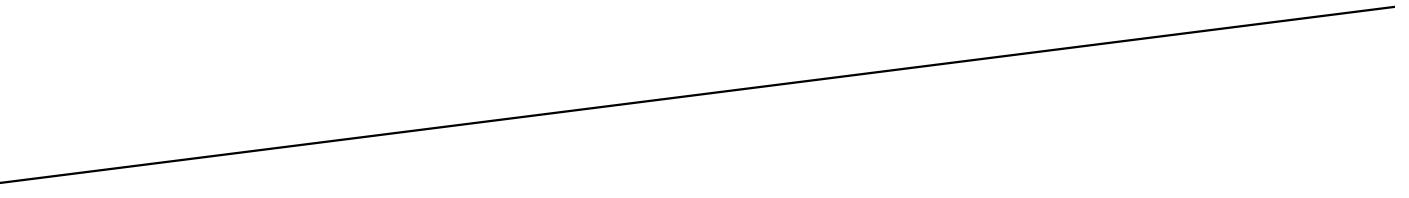


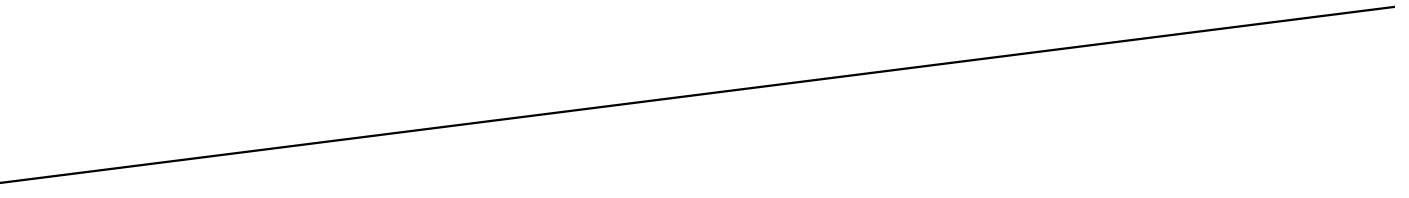


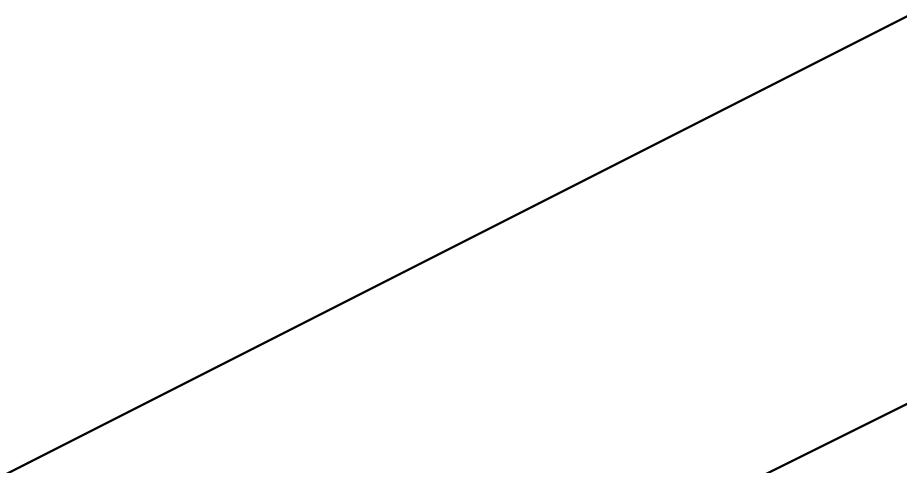
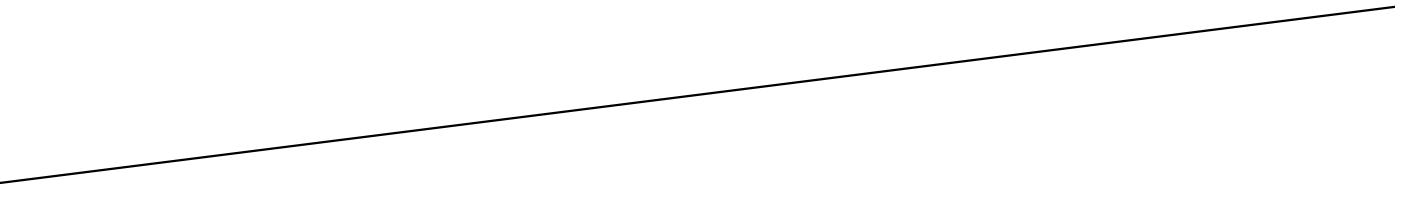


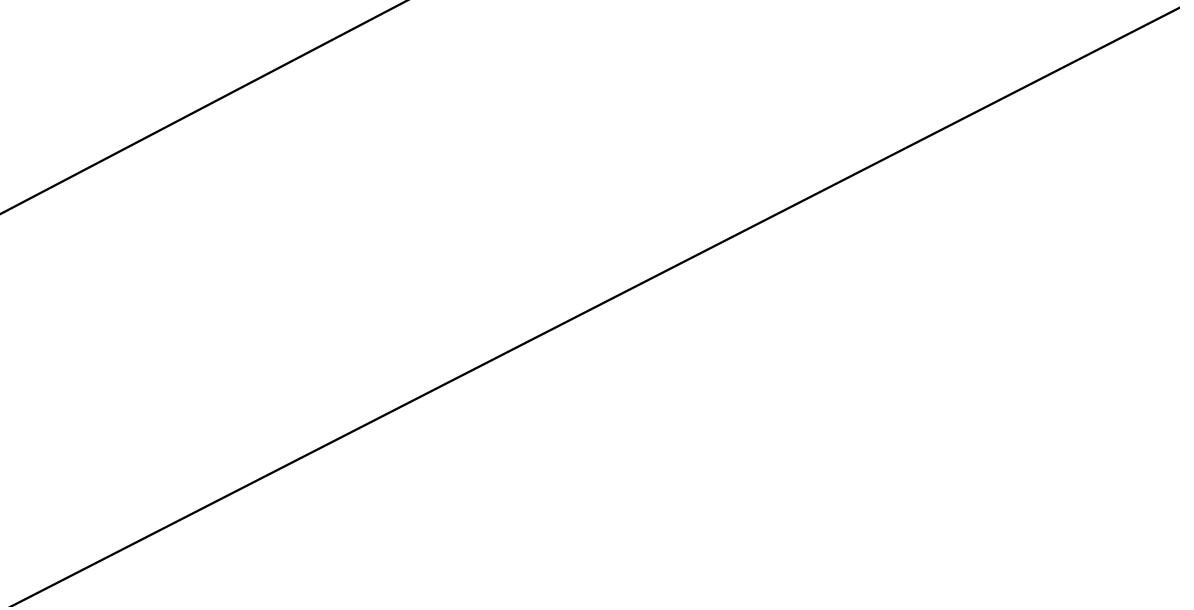
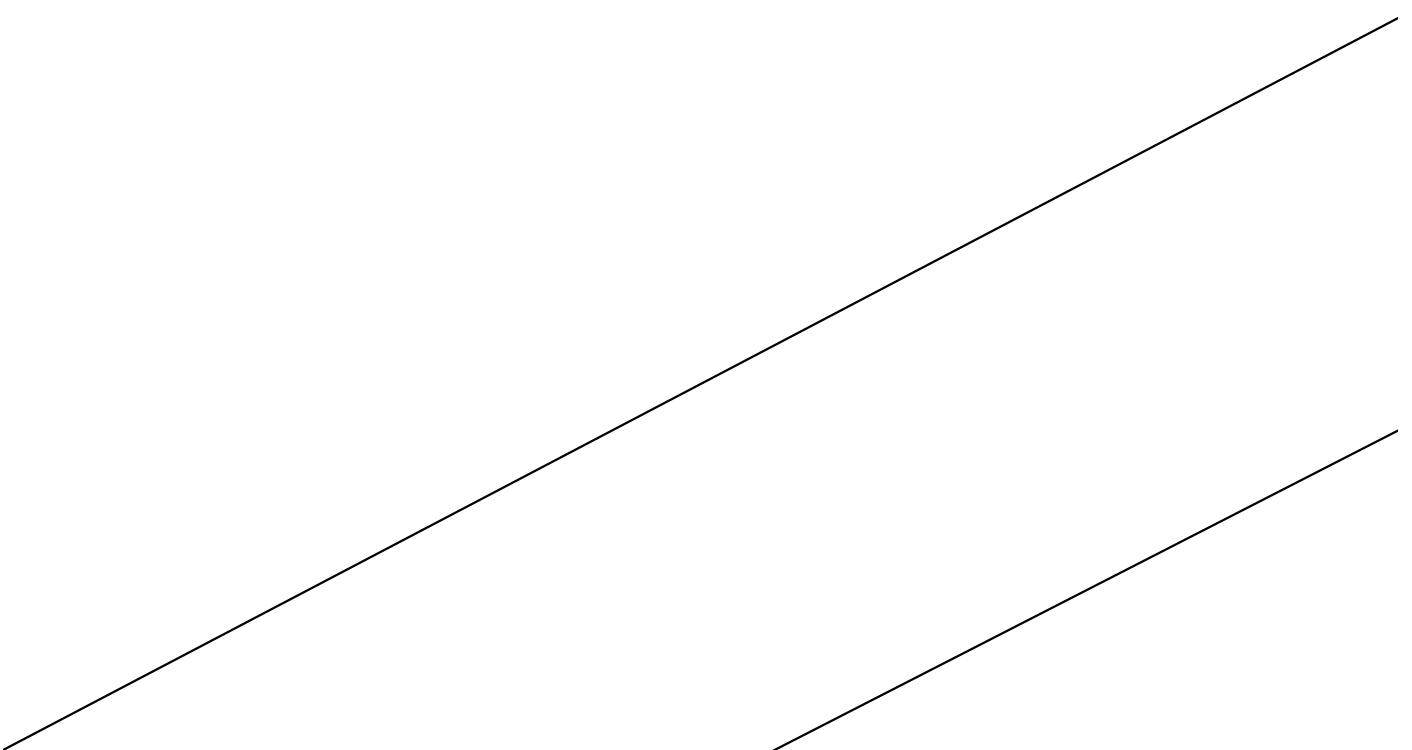
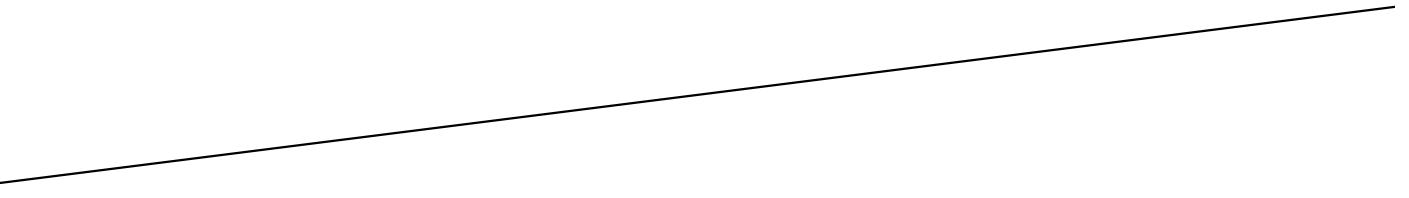


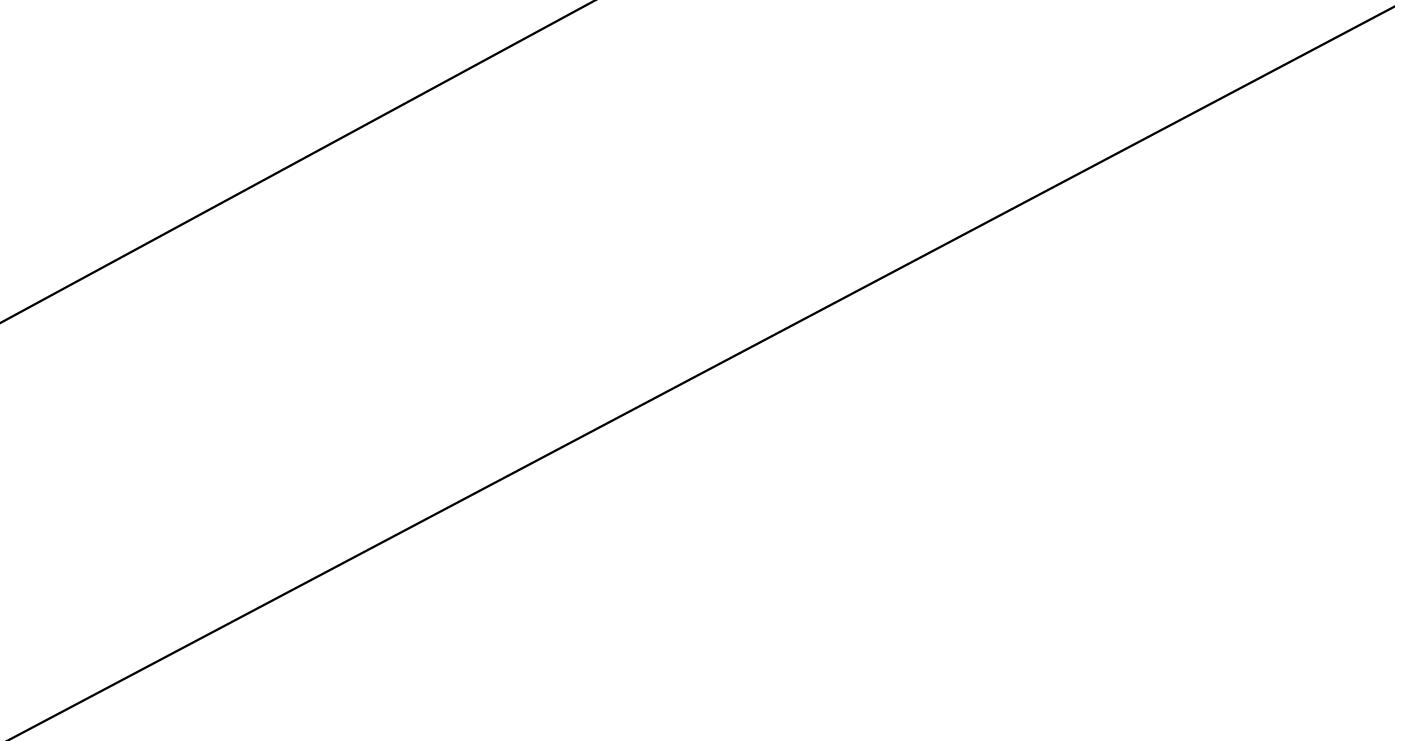
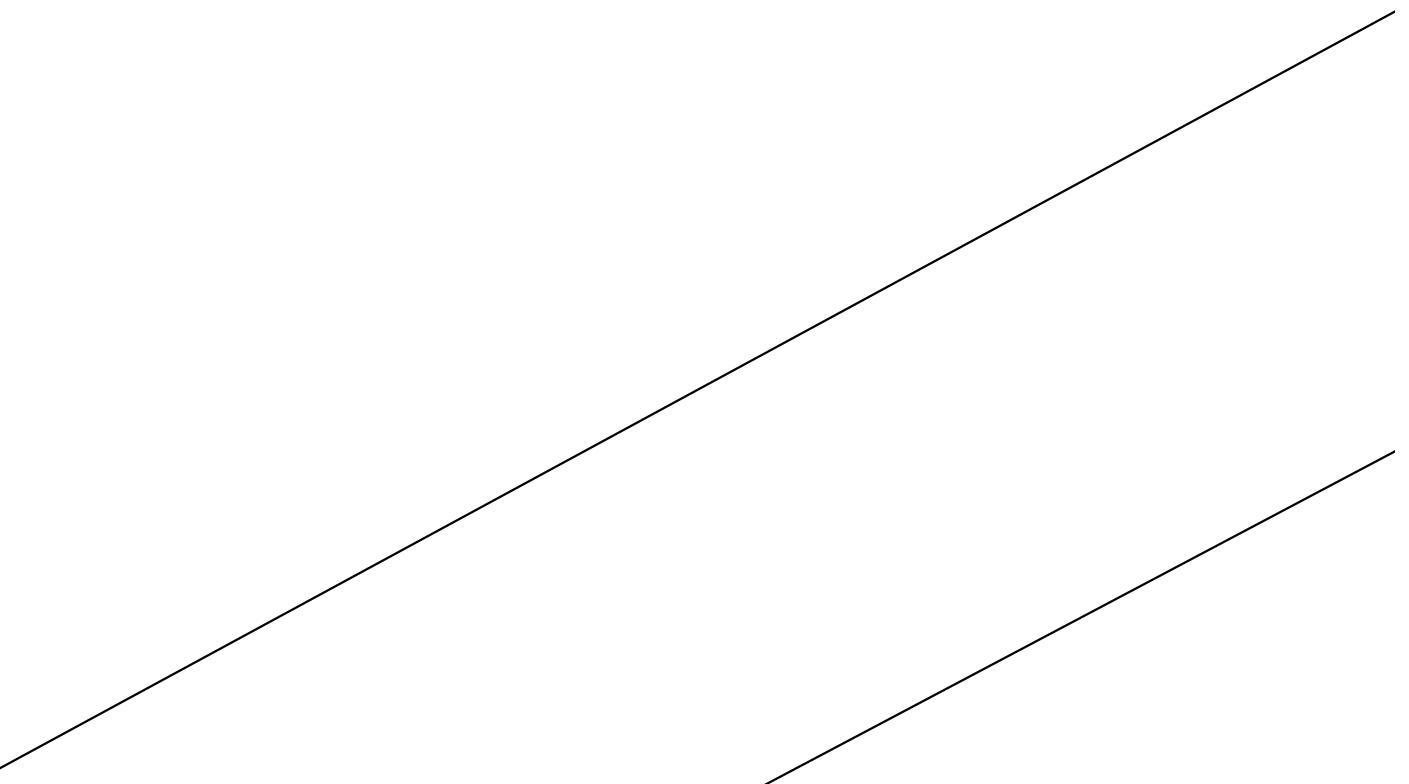
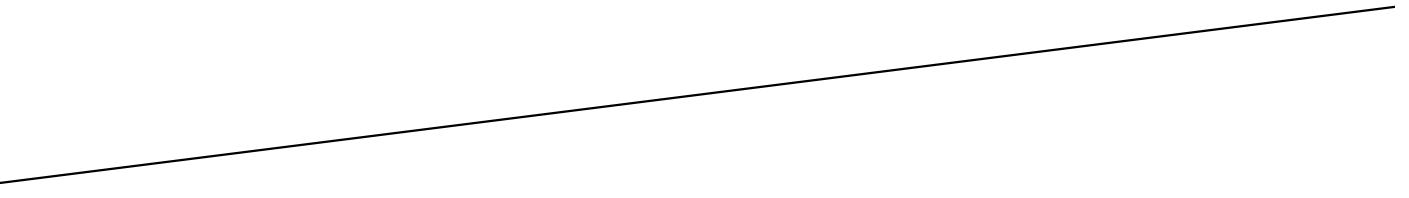


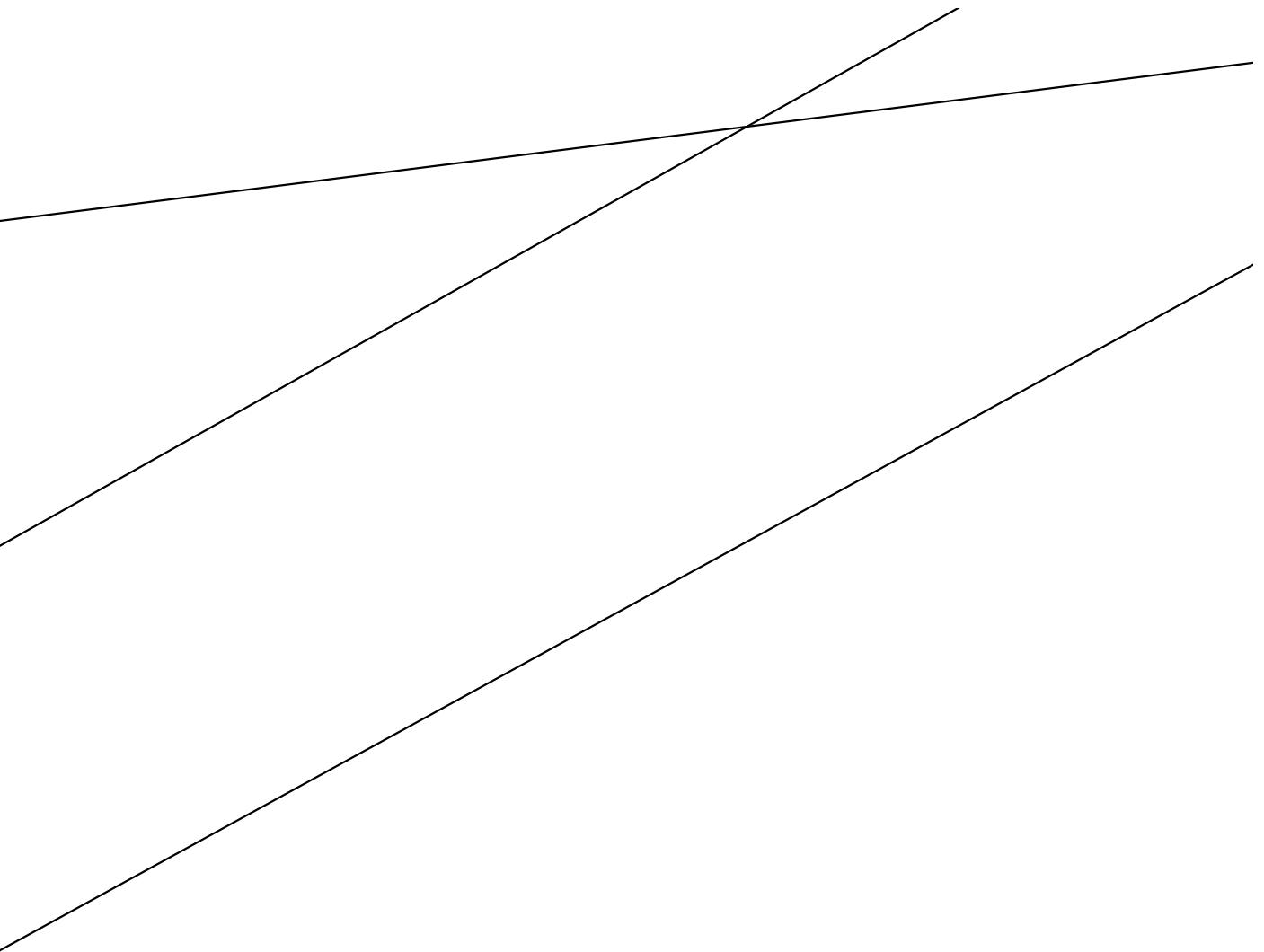


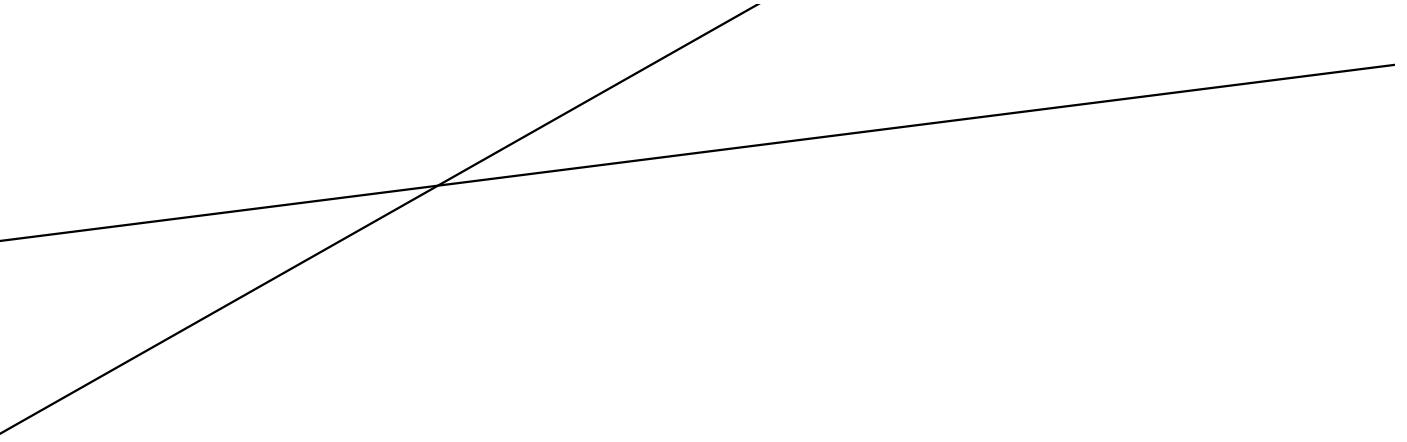


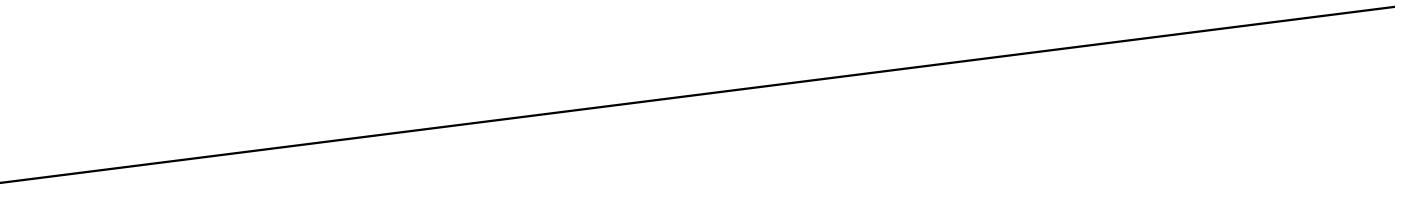


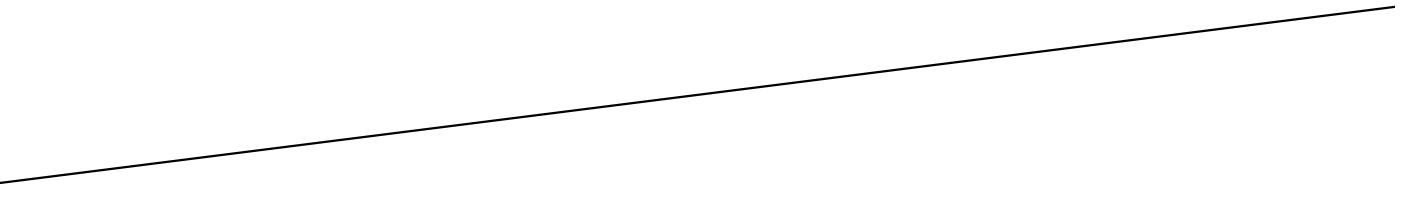


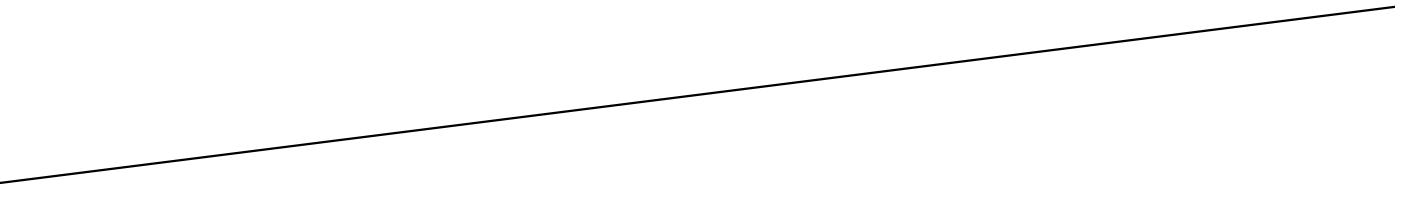


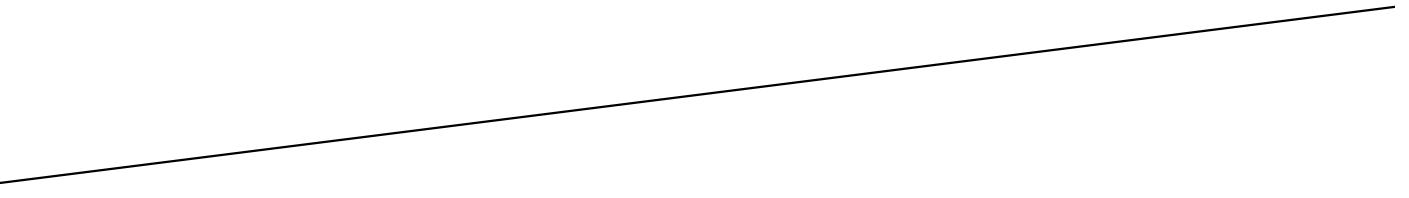


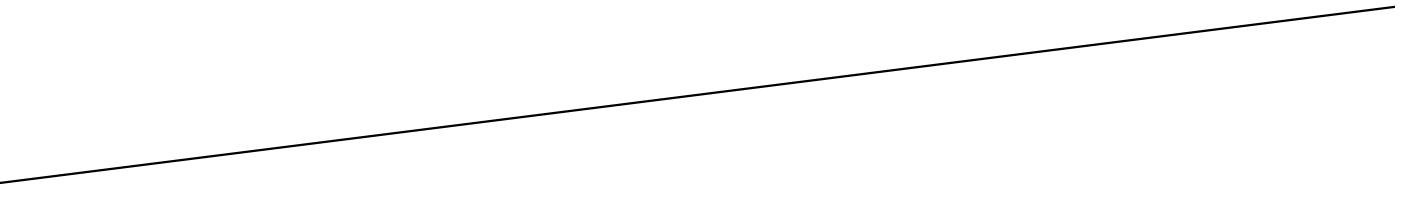


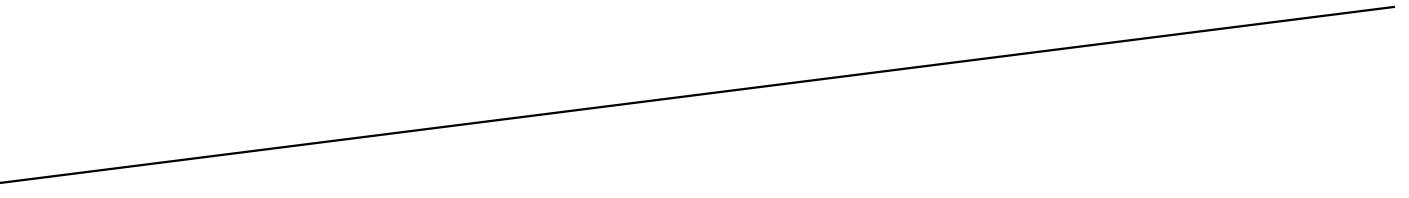


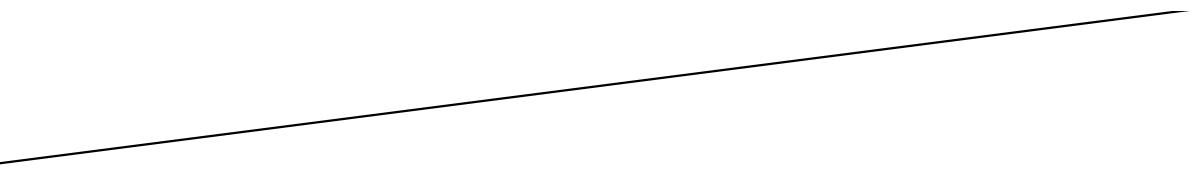








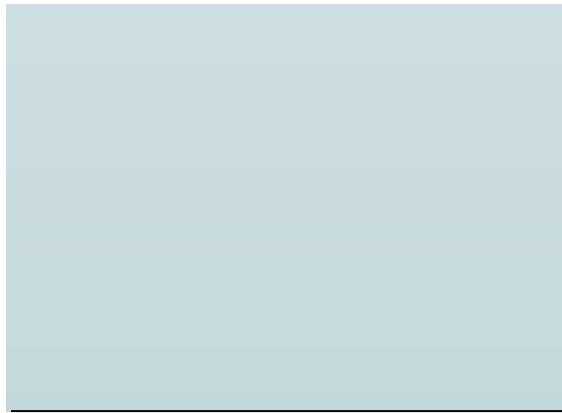


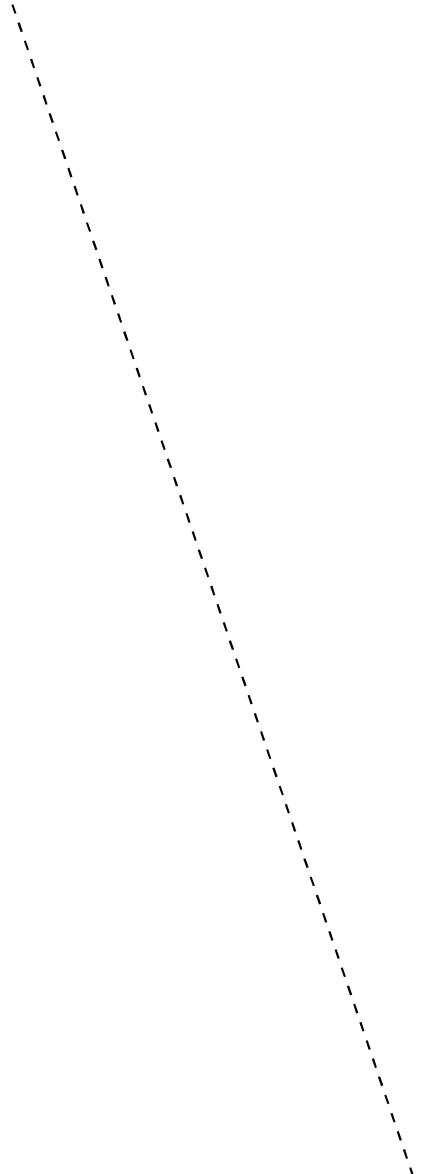


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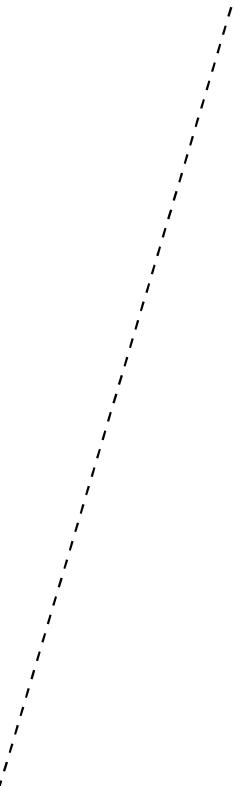

```
 getMutationPoints  
 getMutantLineNumber  
 getMutantDescription  
 getMethodDescriptor  
 getMethodName  
 setMutantLineNumber  
 setMutantDescription  
 setMutatedMethodName  
 setMutatedMethodDescriptor  
 isCountingMutants  
 shouldMutate  
 getMutantIndex  
 nextMutationPoint  
 nextMutationPoint
```

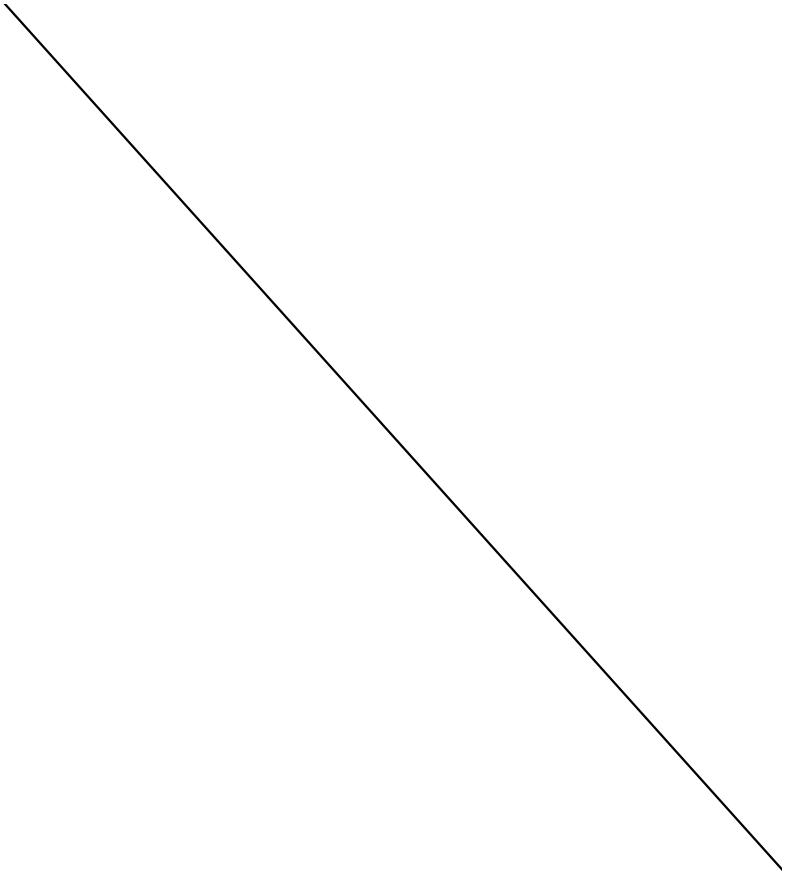
 getMutantDescription
 getMethodDescriptor
 getMethodName
 setMutantLineNumber
 setMutantDescription
 setMutatedMethodName
 setMutatedMethodDescriptor
 isCountingMutants
 shouldMutate
 getMutantIndex
 nextMutationPoint
 nextMutationPoint

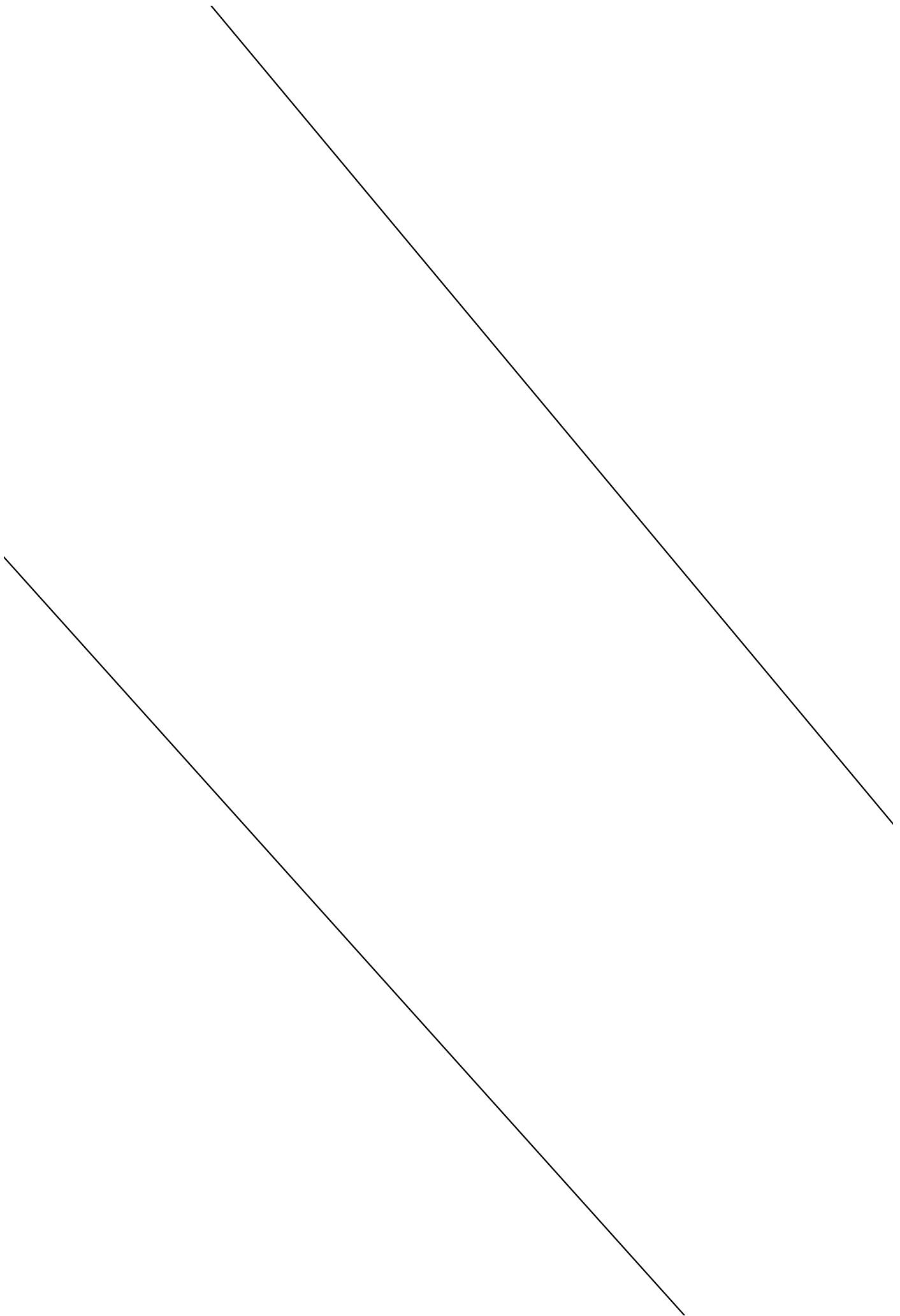


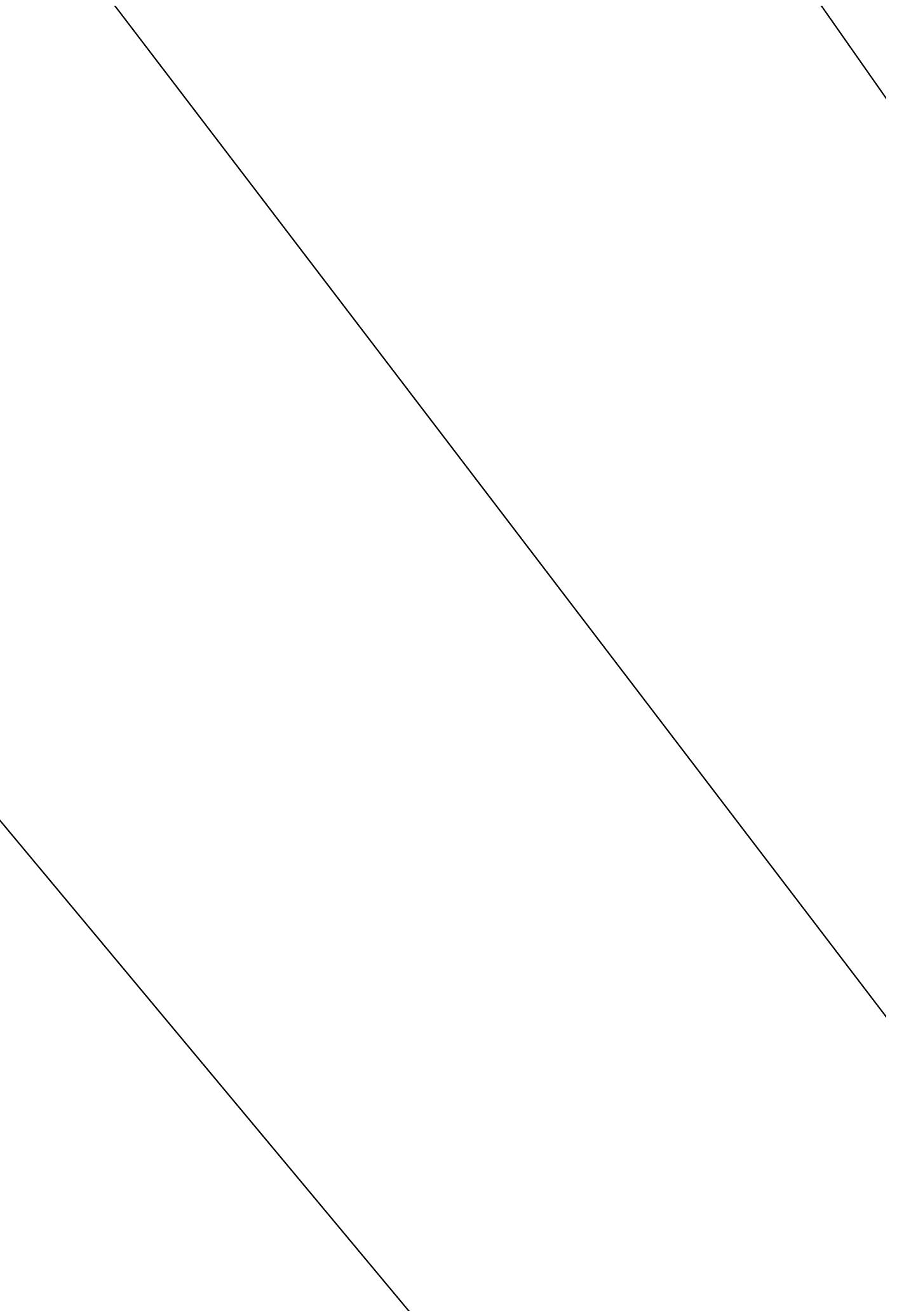


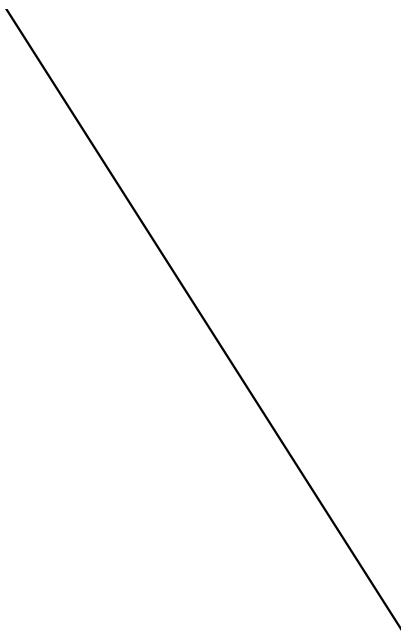
FitnessObjective implements ObjectiveCalculator

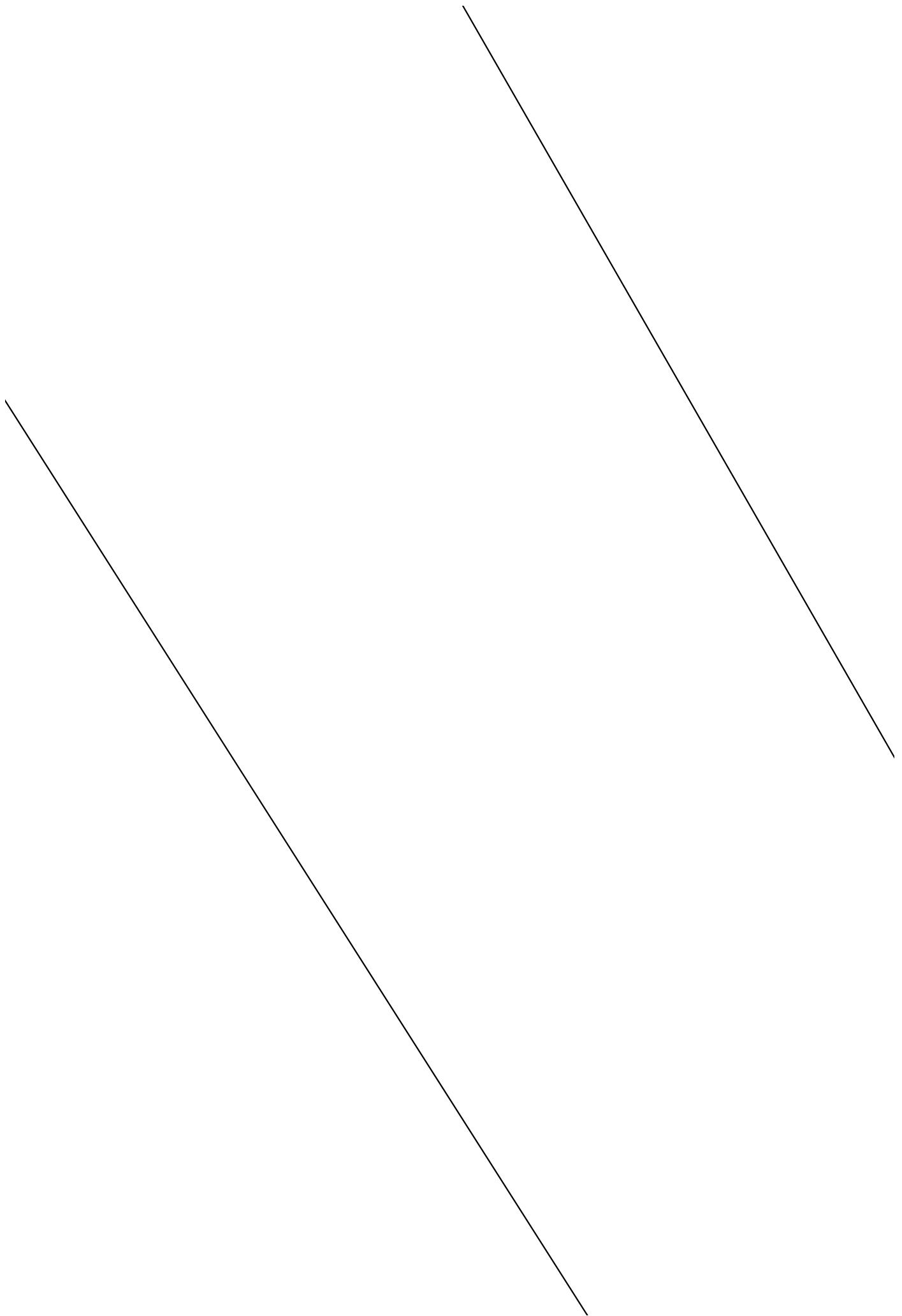


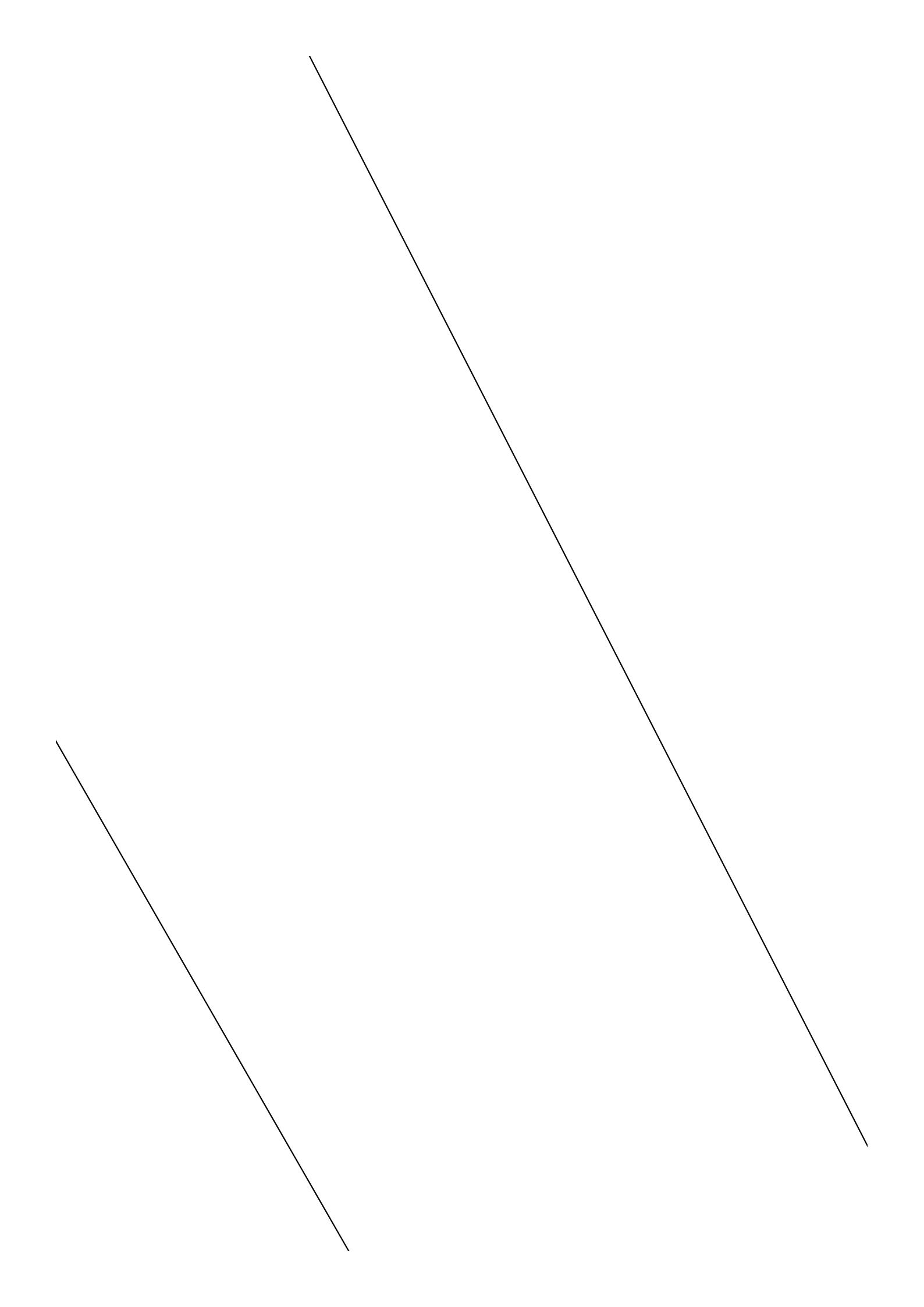


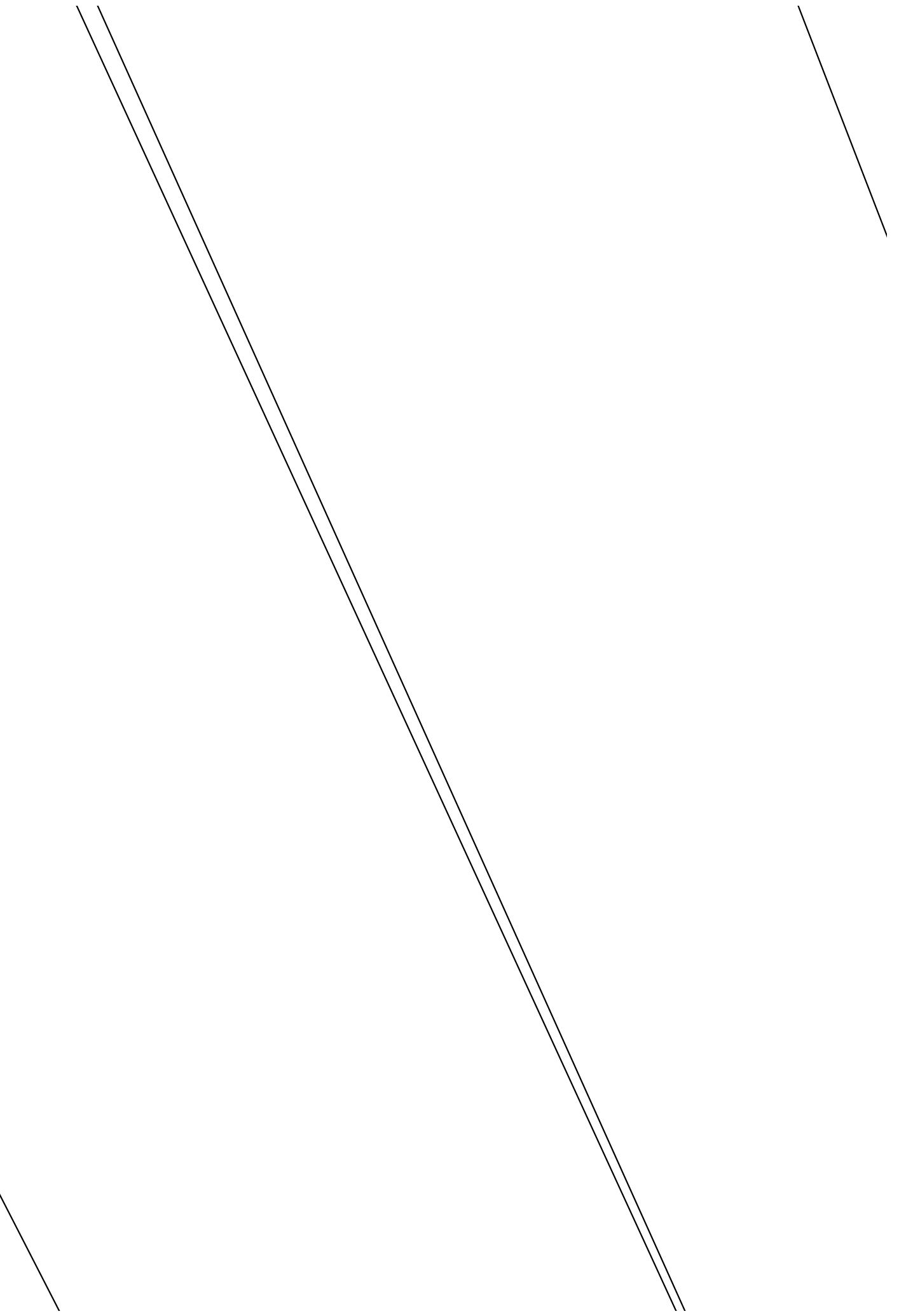


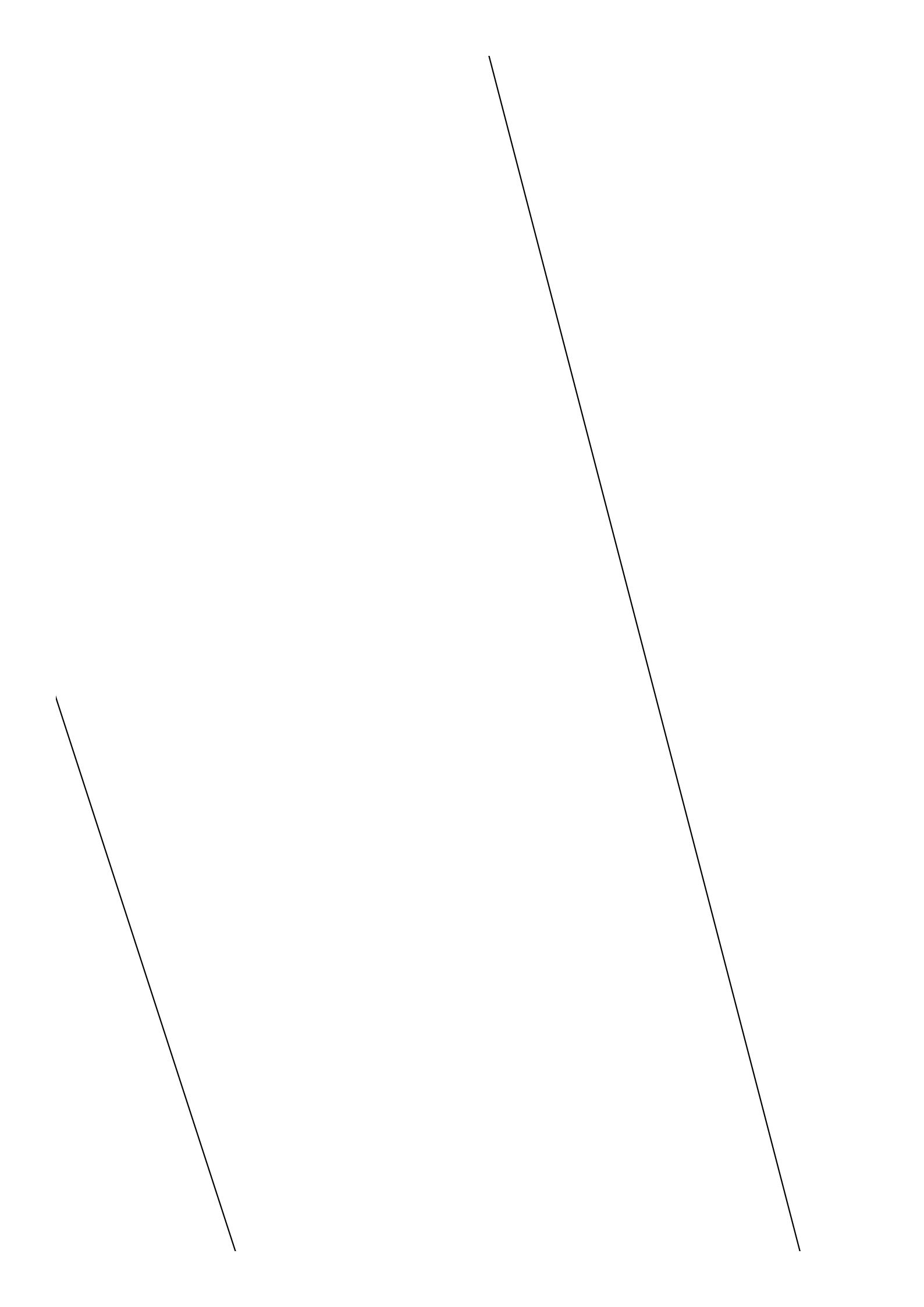


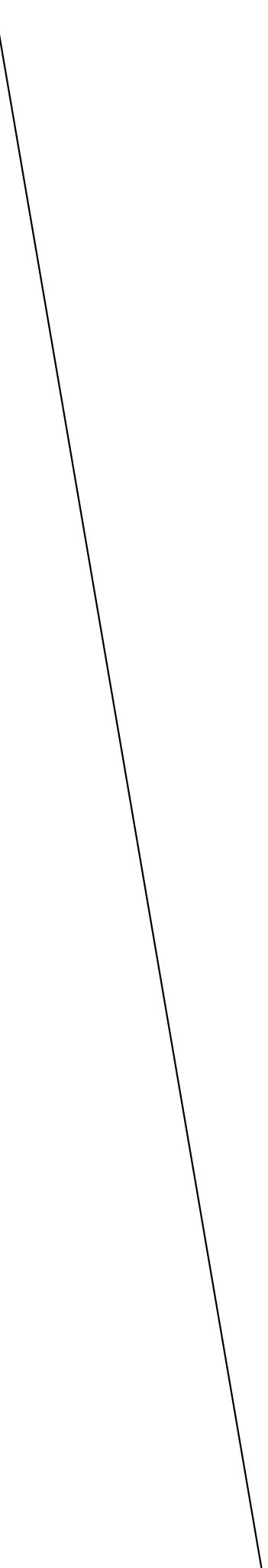


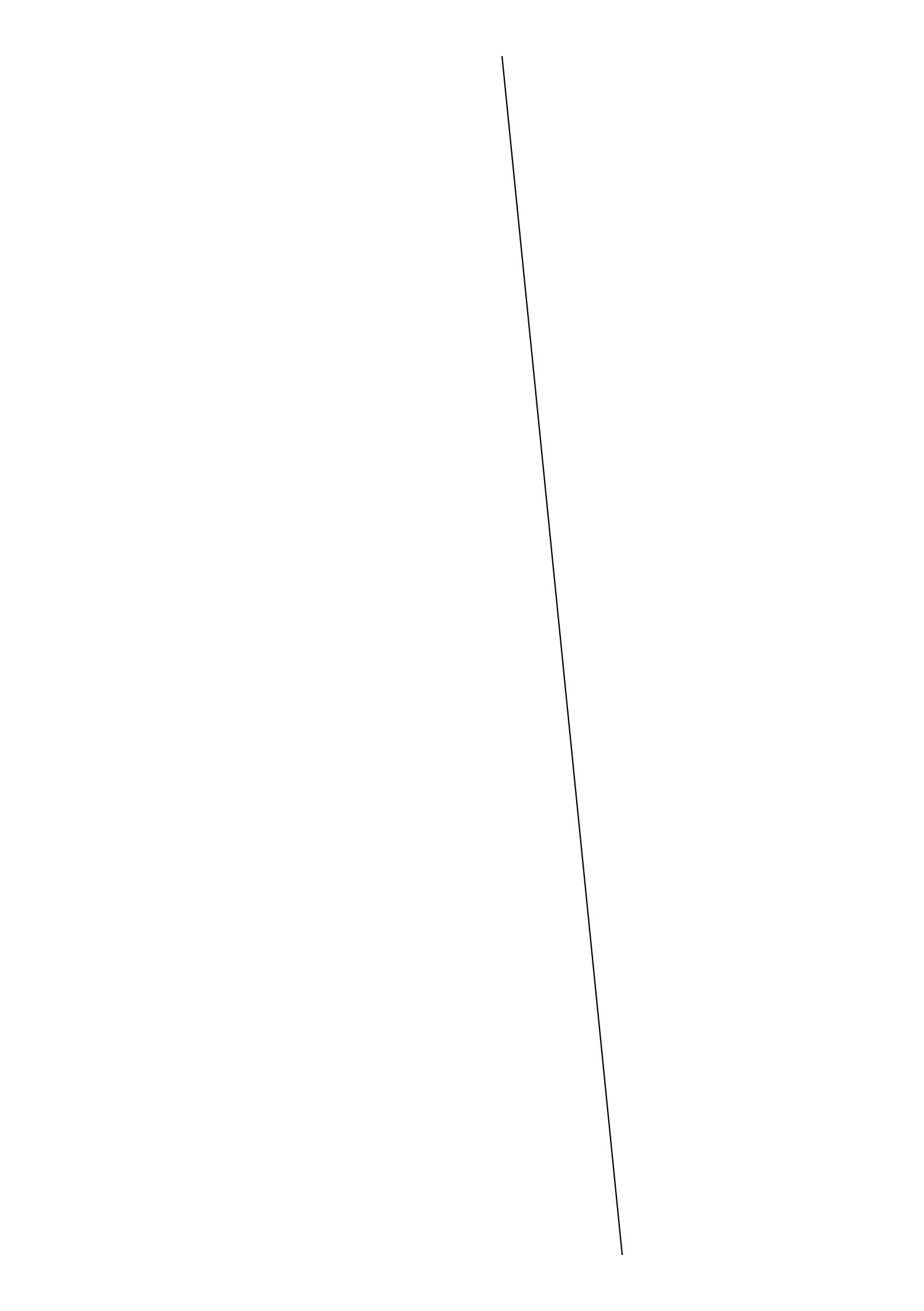




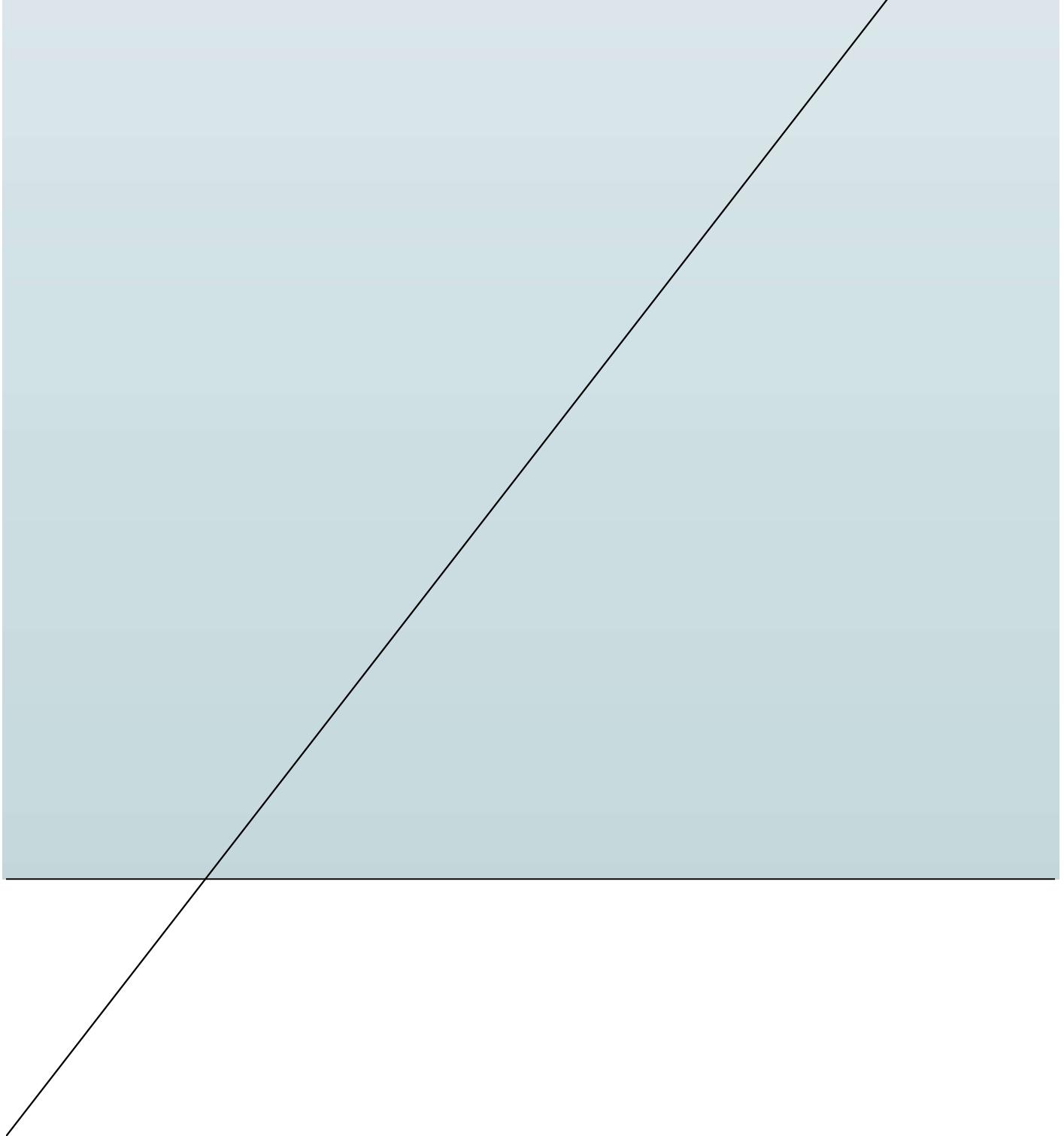
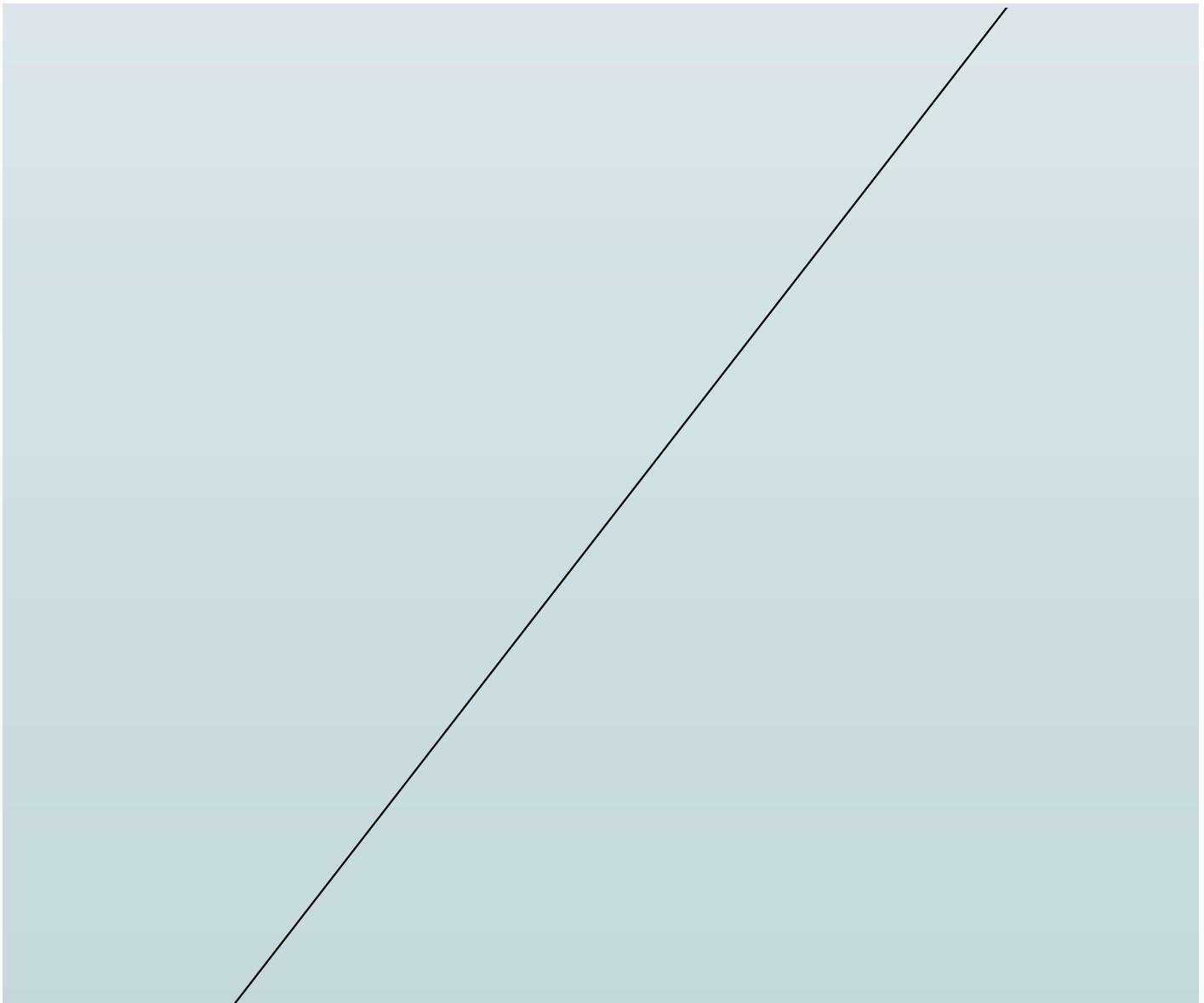






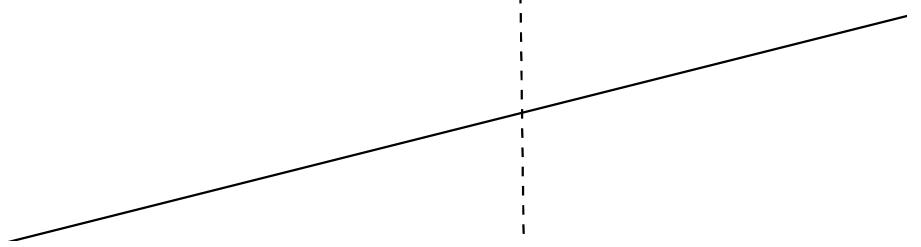


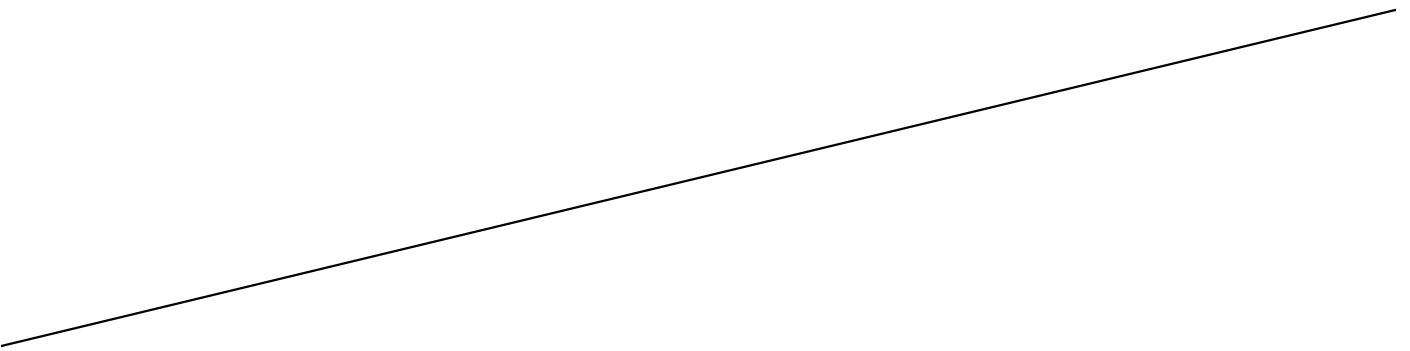

```
collectSummaryData
computeInitialTestsDuration
init
initReset
mutate
getBytecode
generateFoms
mutate
getEvaluator
getStatistic
setStatistic
getKind
setKind
getTargetClass
getOperators
setOperators
getCache
setCache
getResultFormatter
 setResultFormatter
getSerialVersionUID
getClasspath
getEnvFactory
getTesterFactory
getOperatorsFactory
getMaxInfiniteLoopGuardTimeout
getTester
setTester
setEvaluator
getLOGGER
getWorkspace
AbstractWork
getClientId
canRetry
getRetries
getSerialVersionUID
```

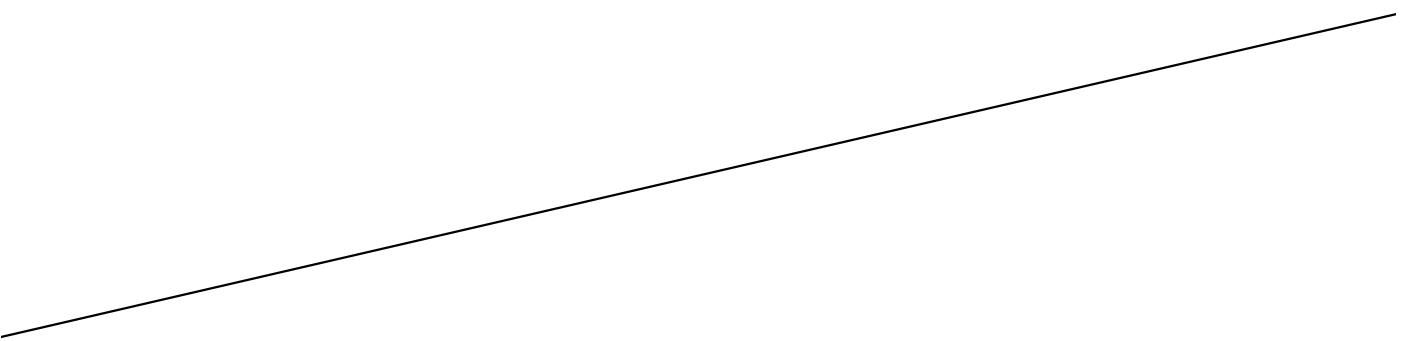


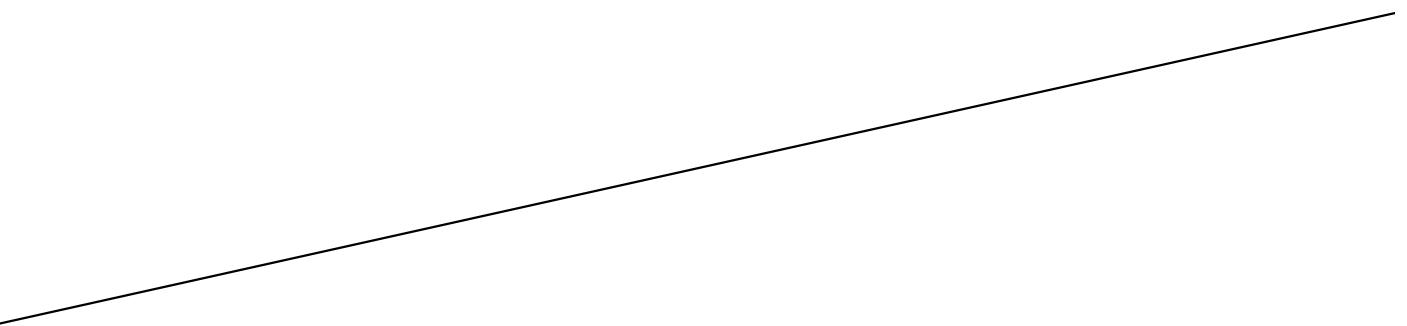
«Synchronized»
 canRetry

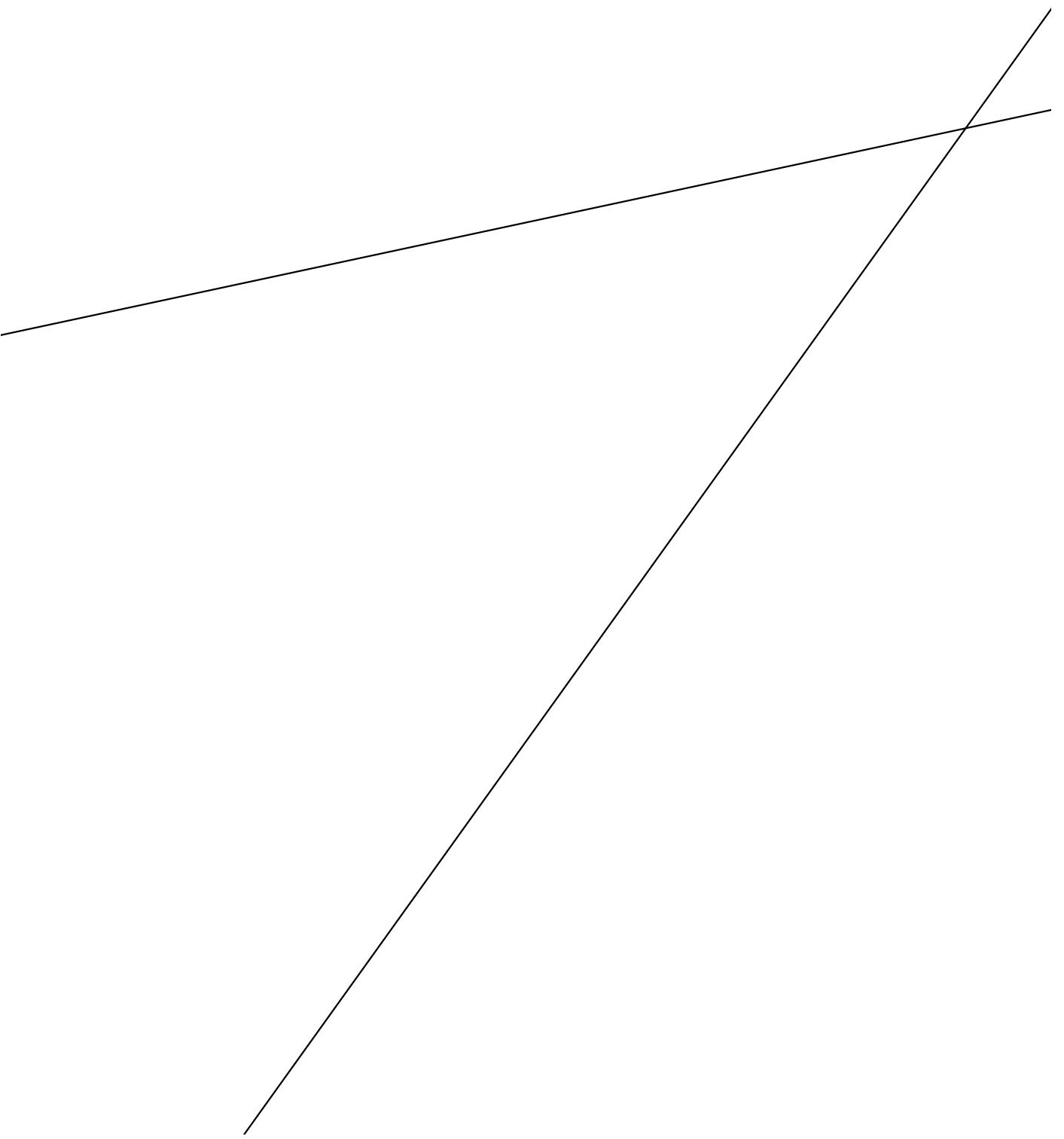
AbstractQueueClient implements IQueueClient

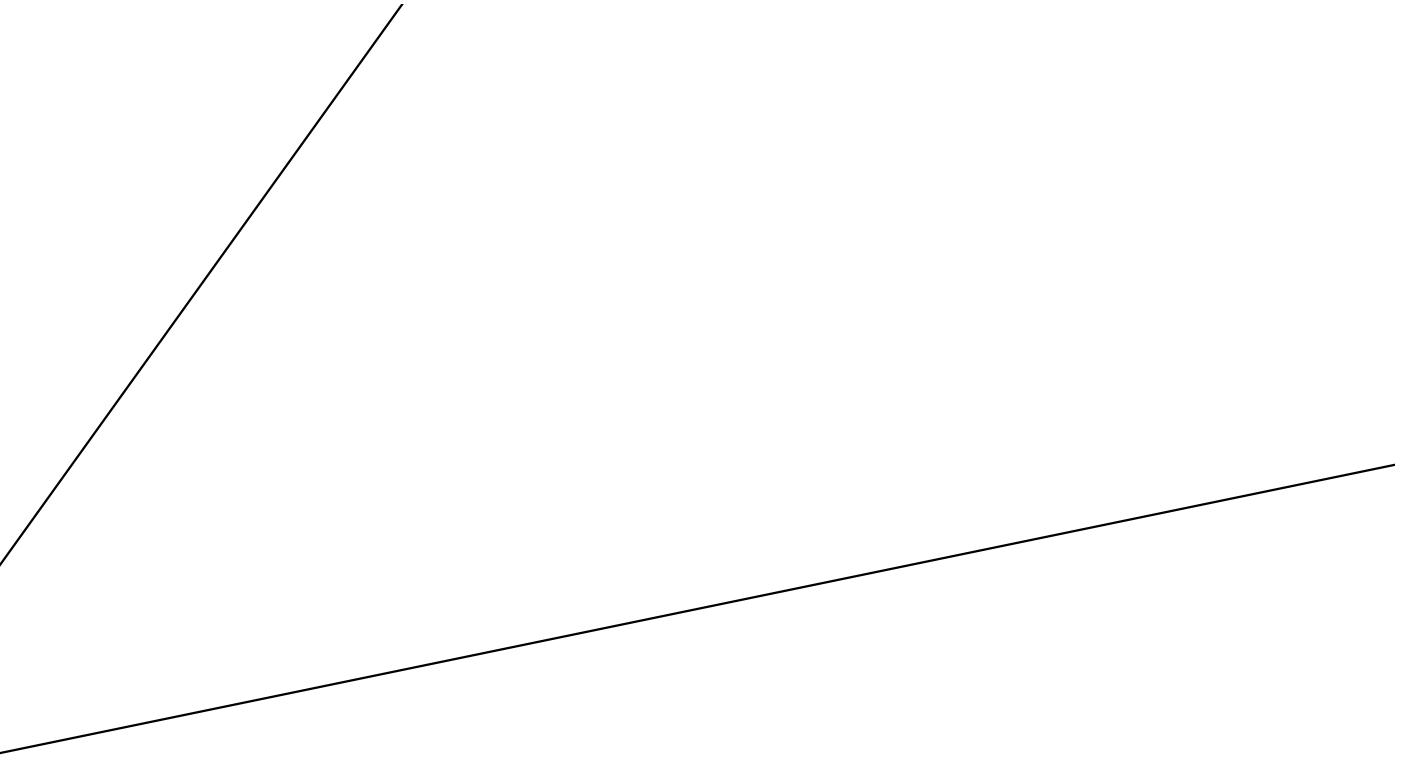


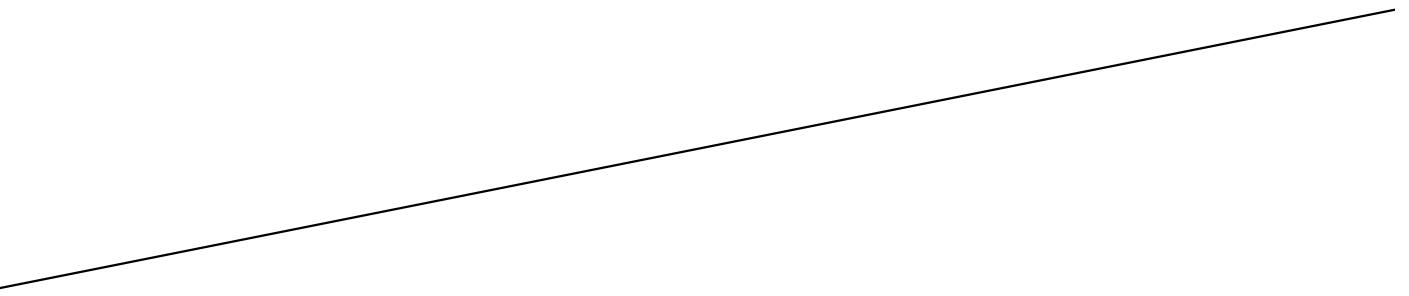


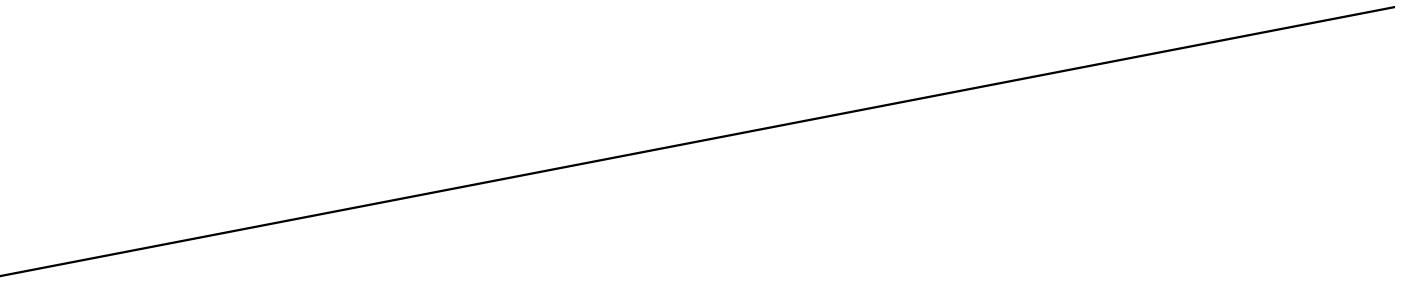


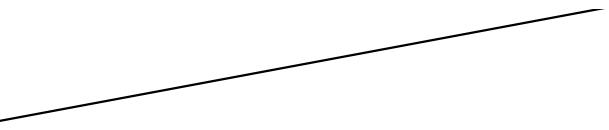


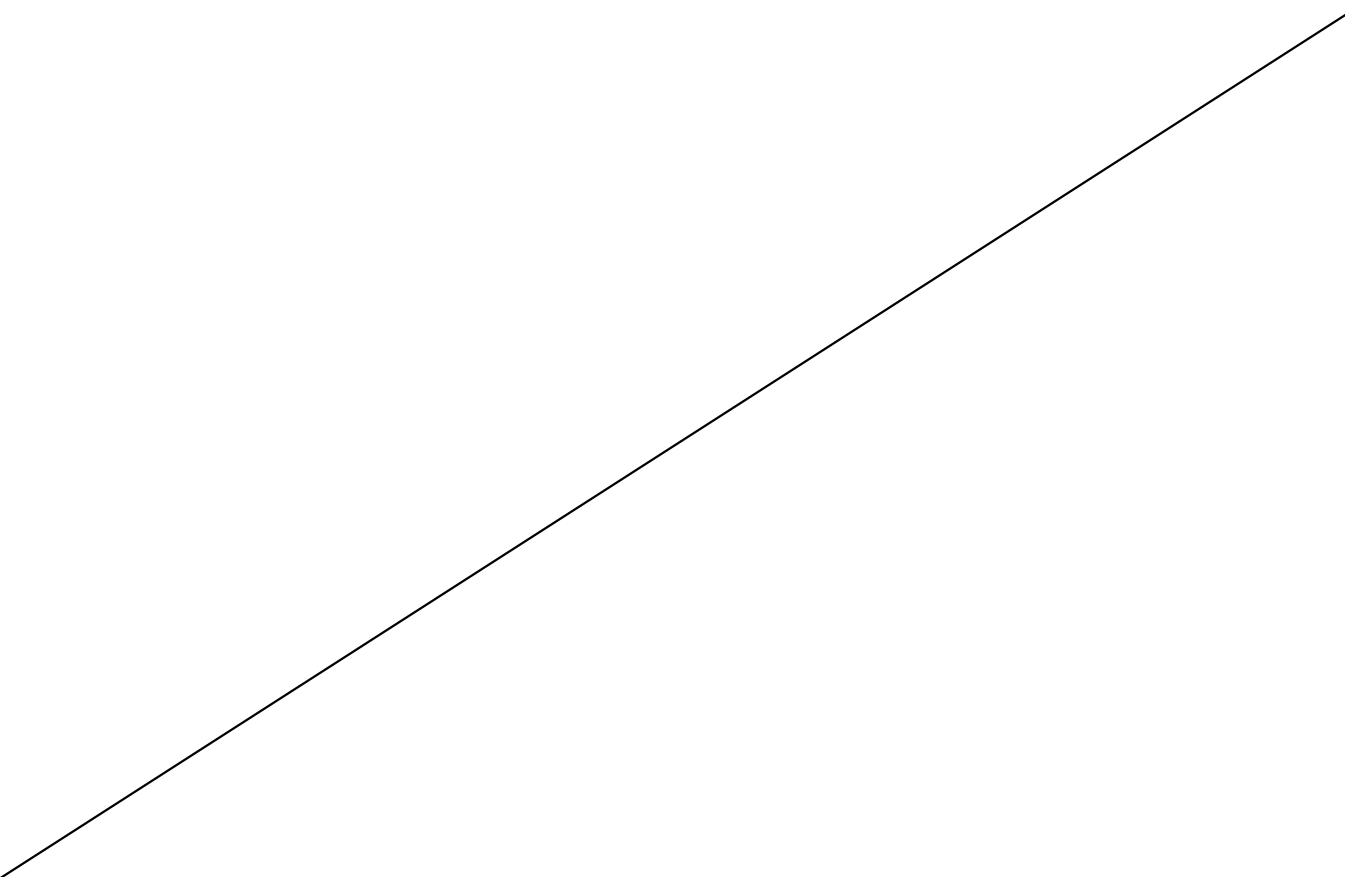


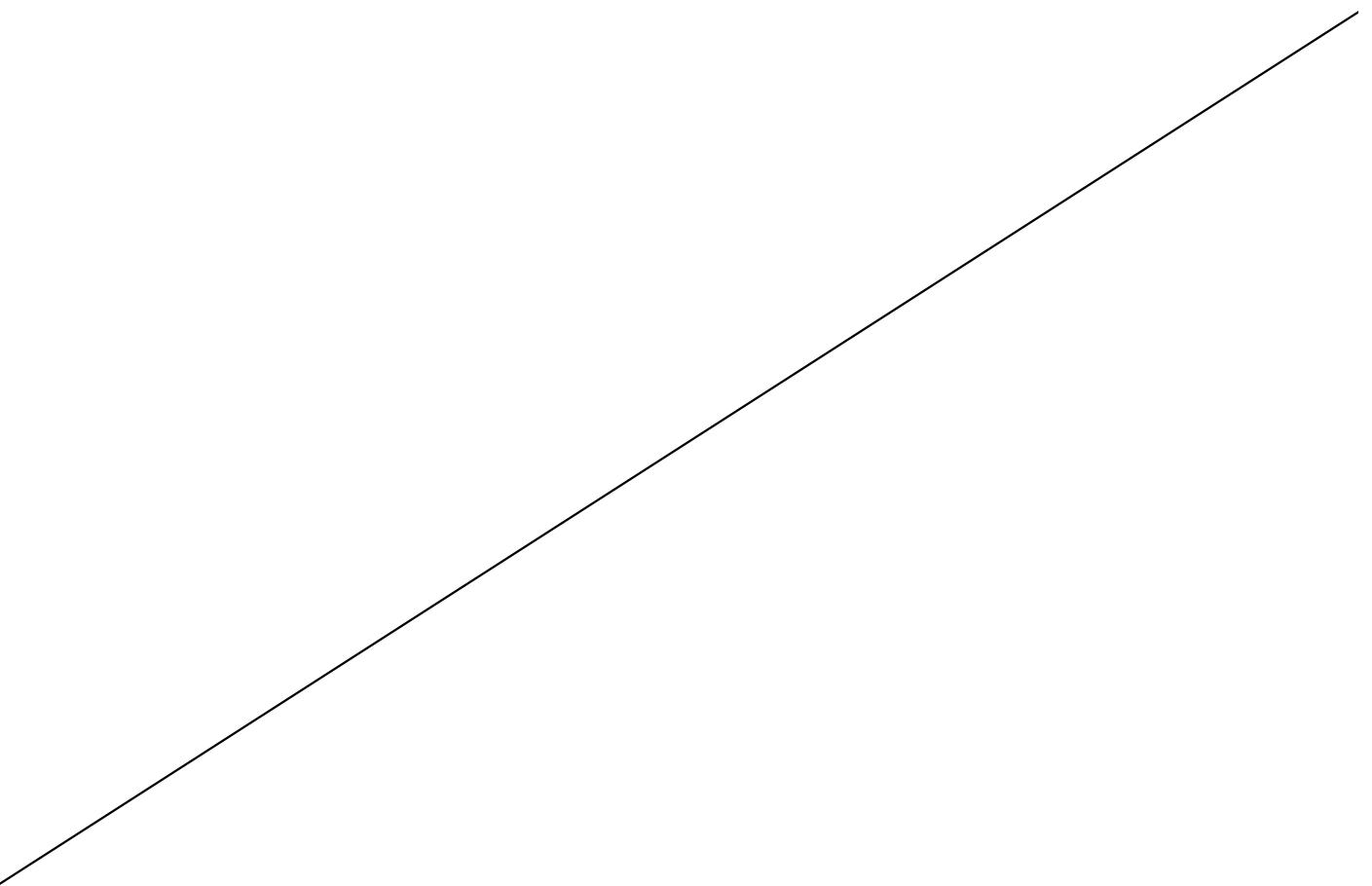


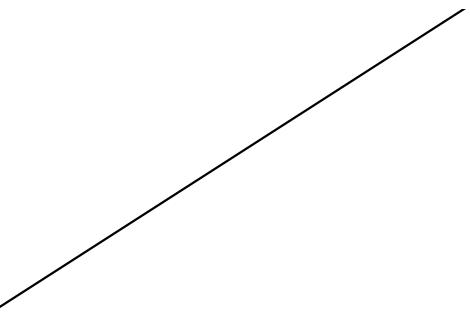


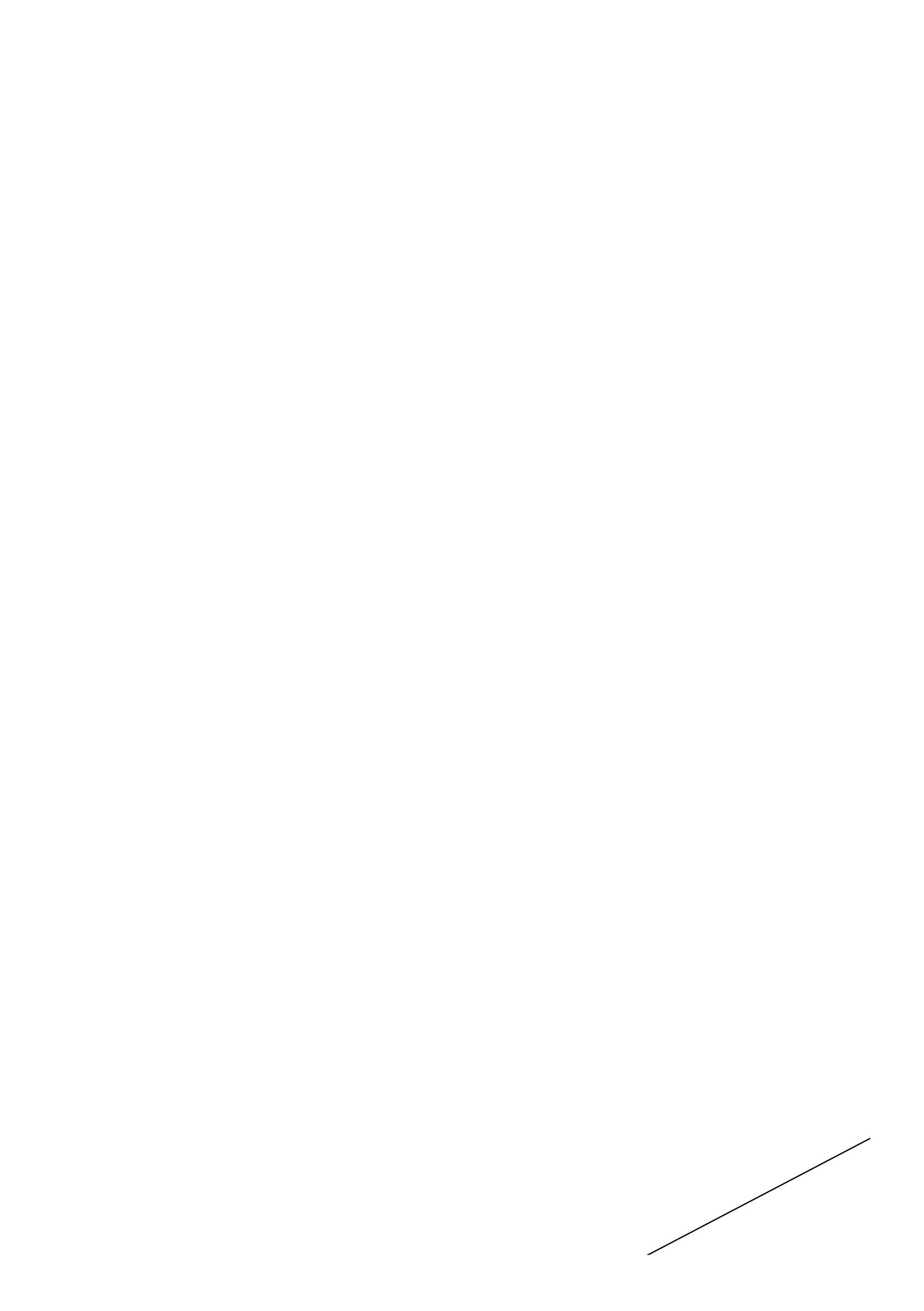


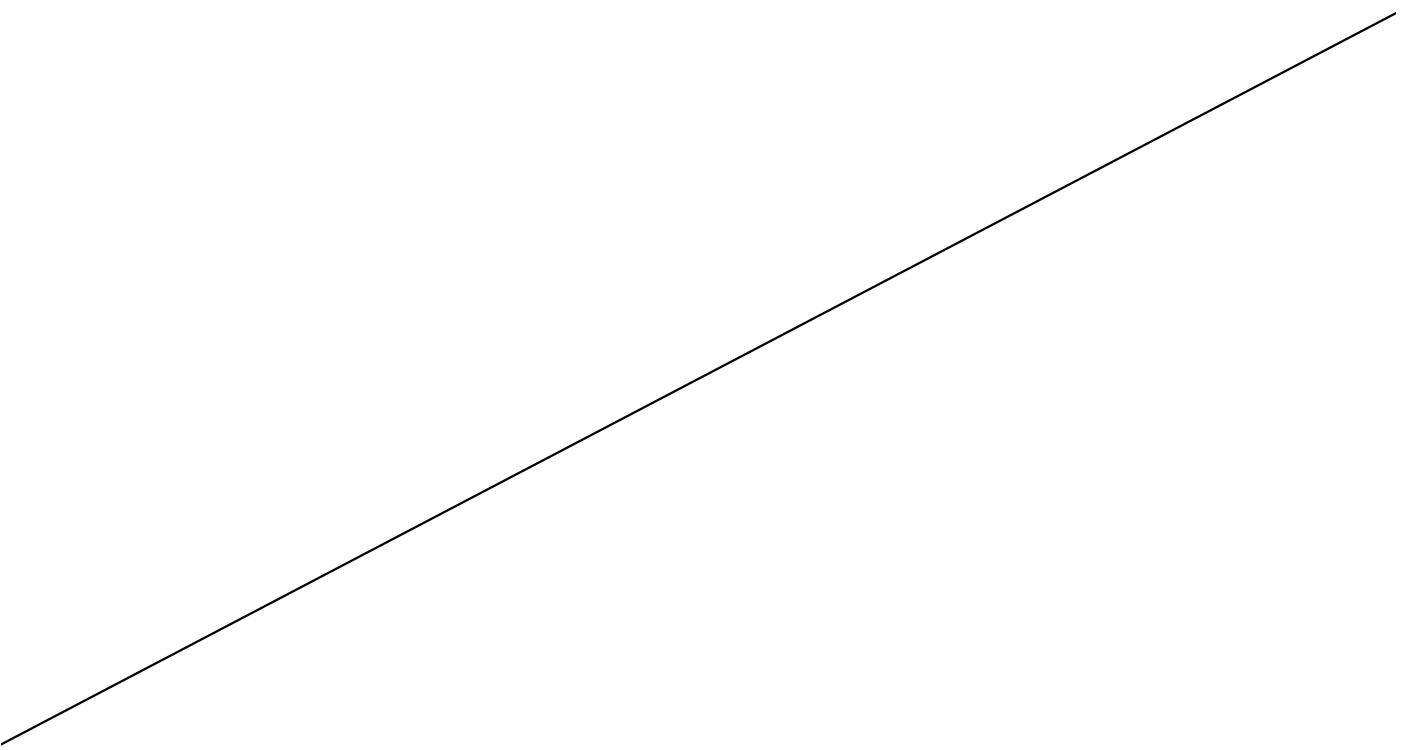


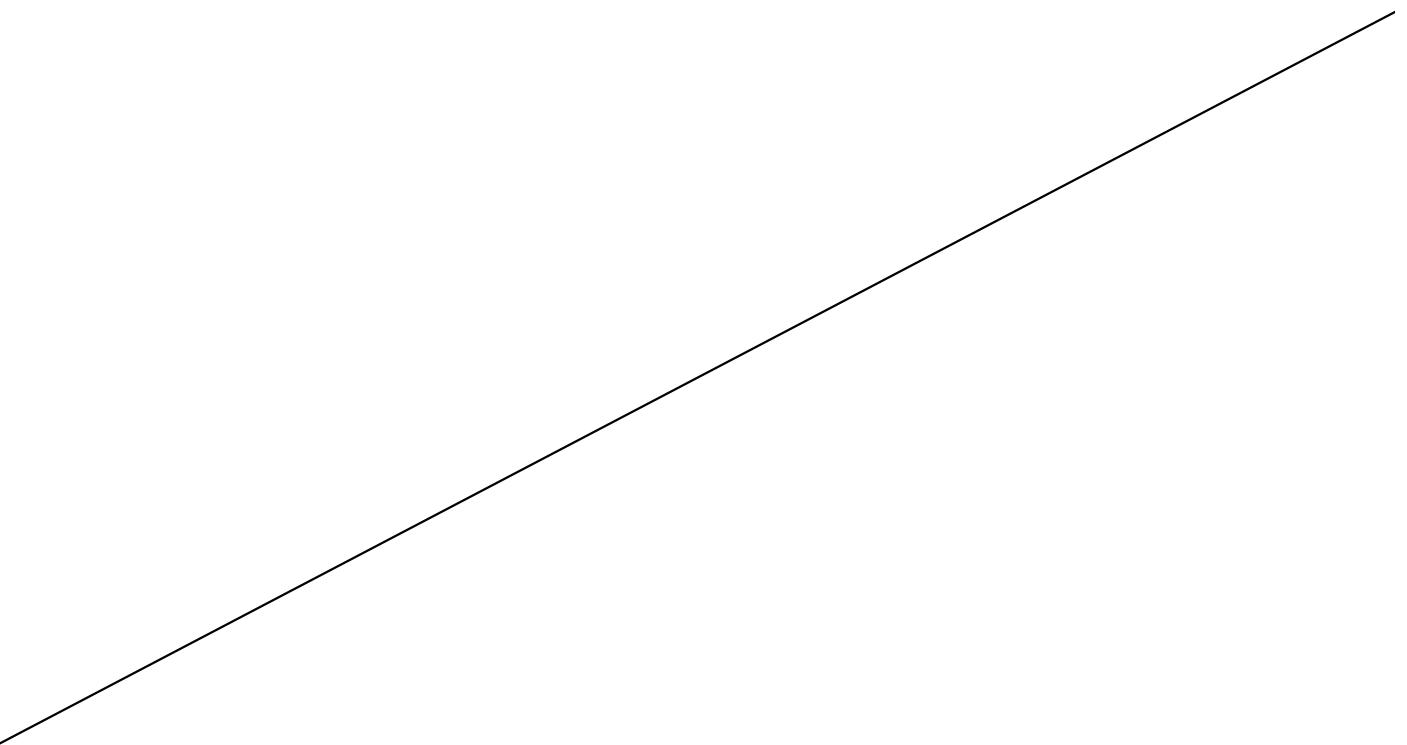


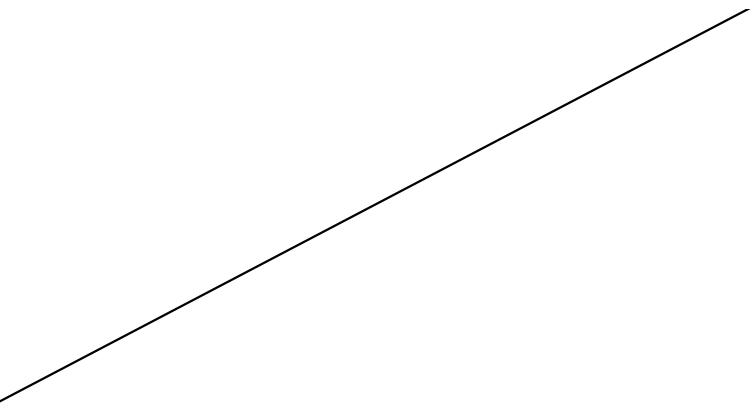


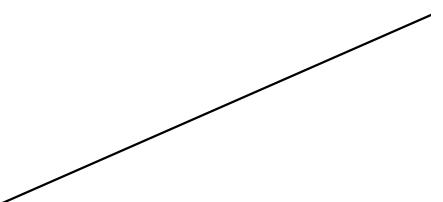


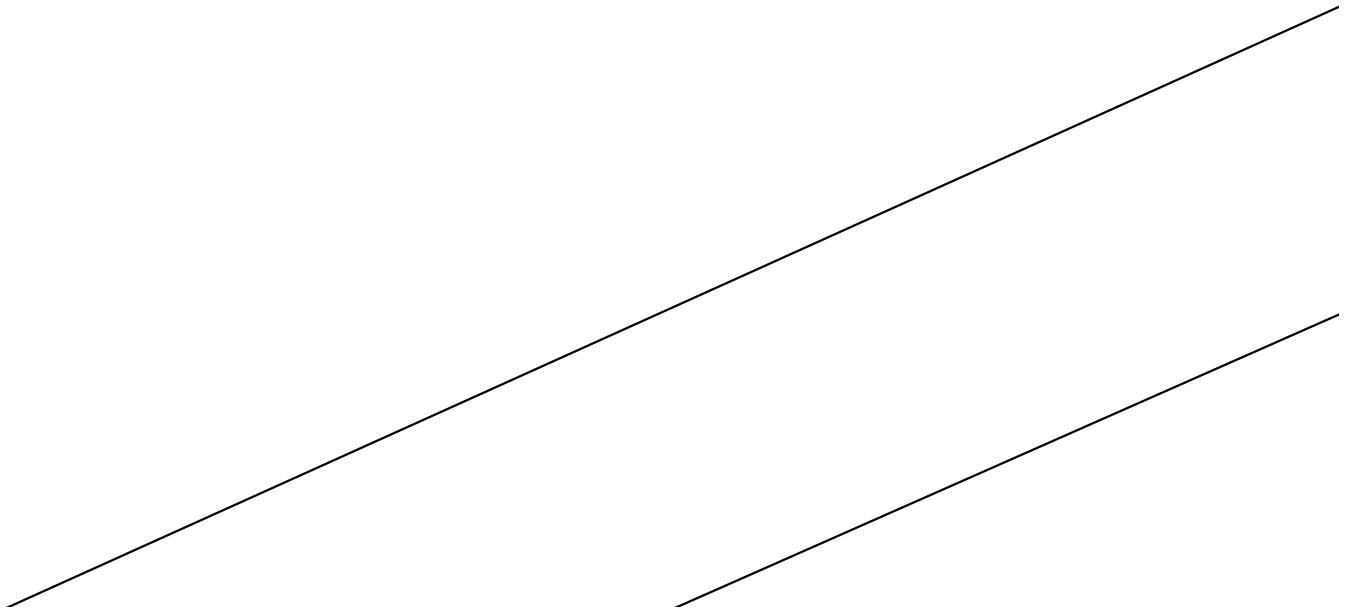


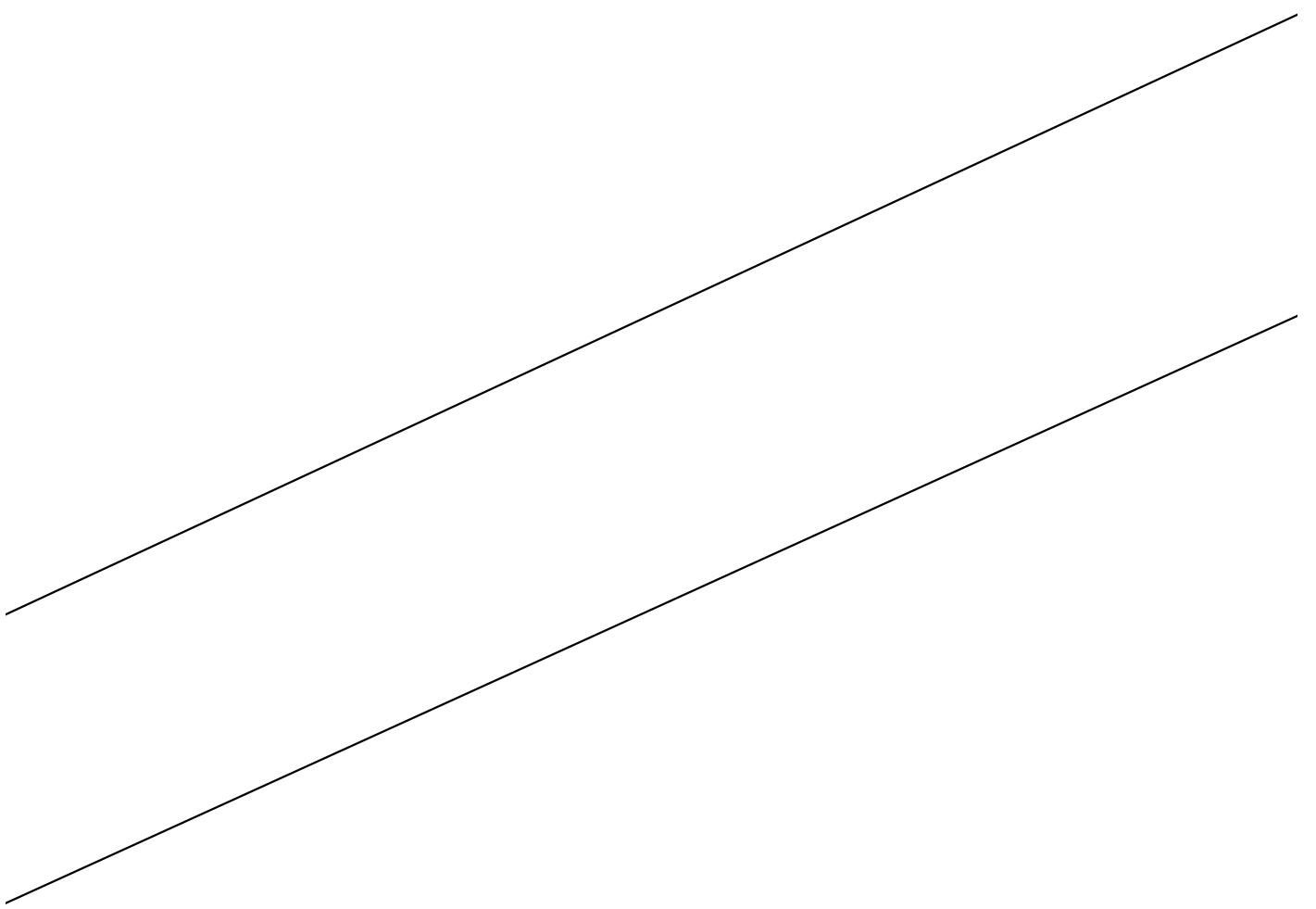


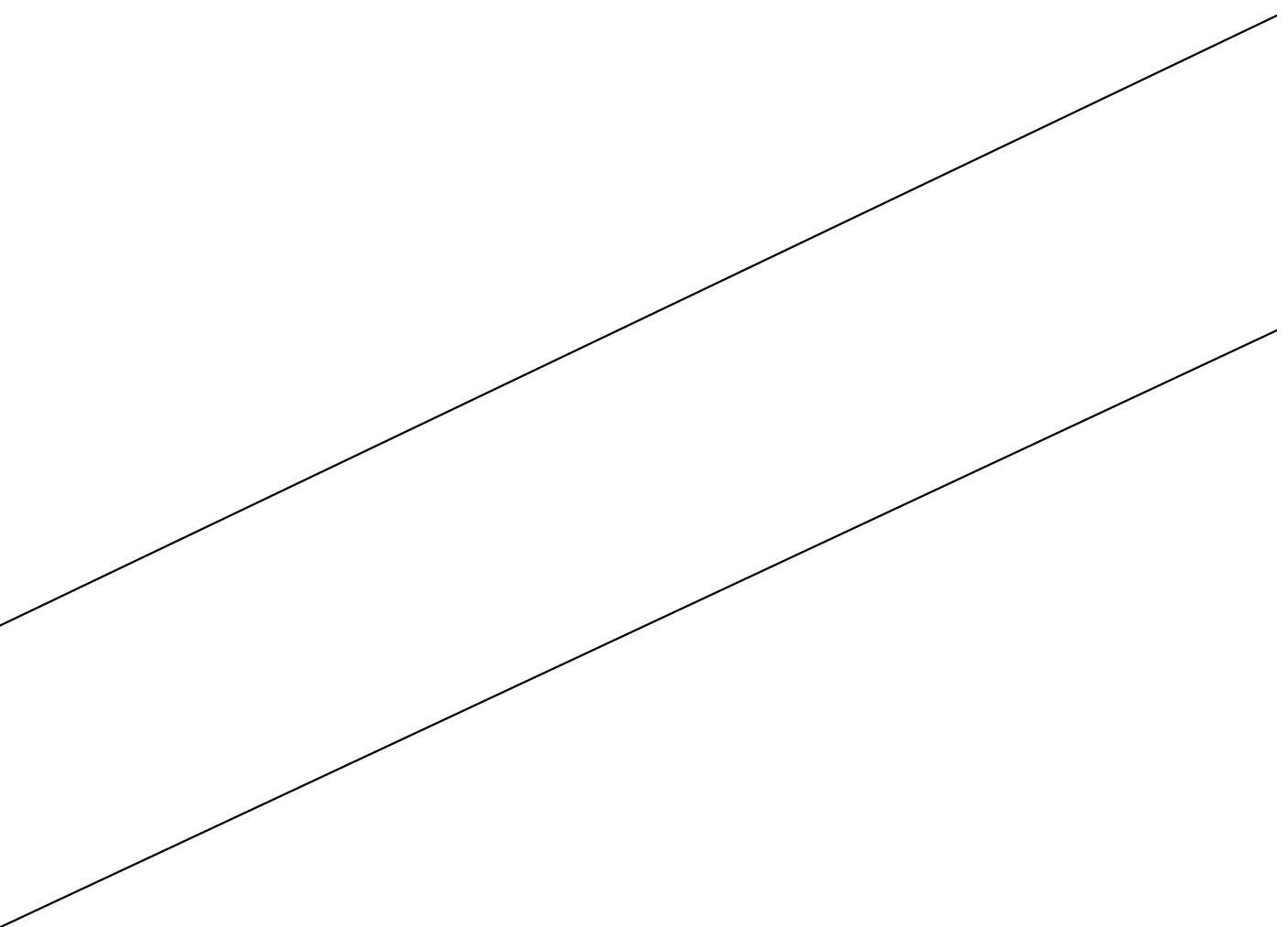


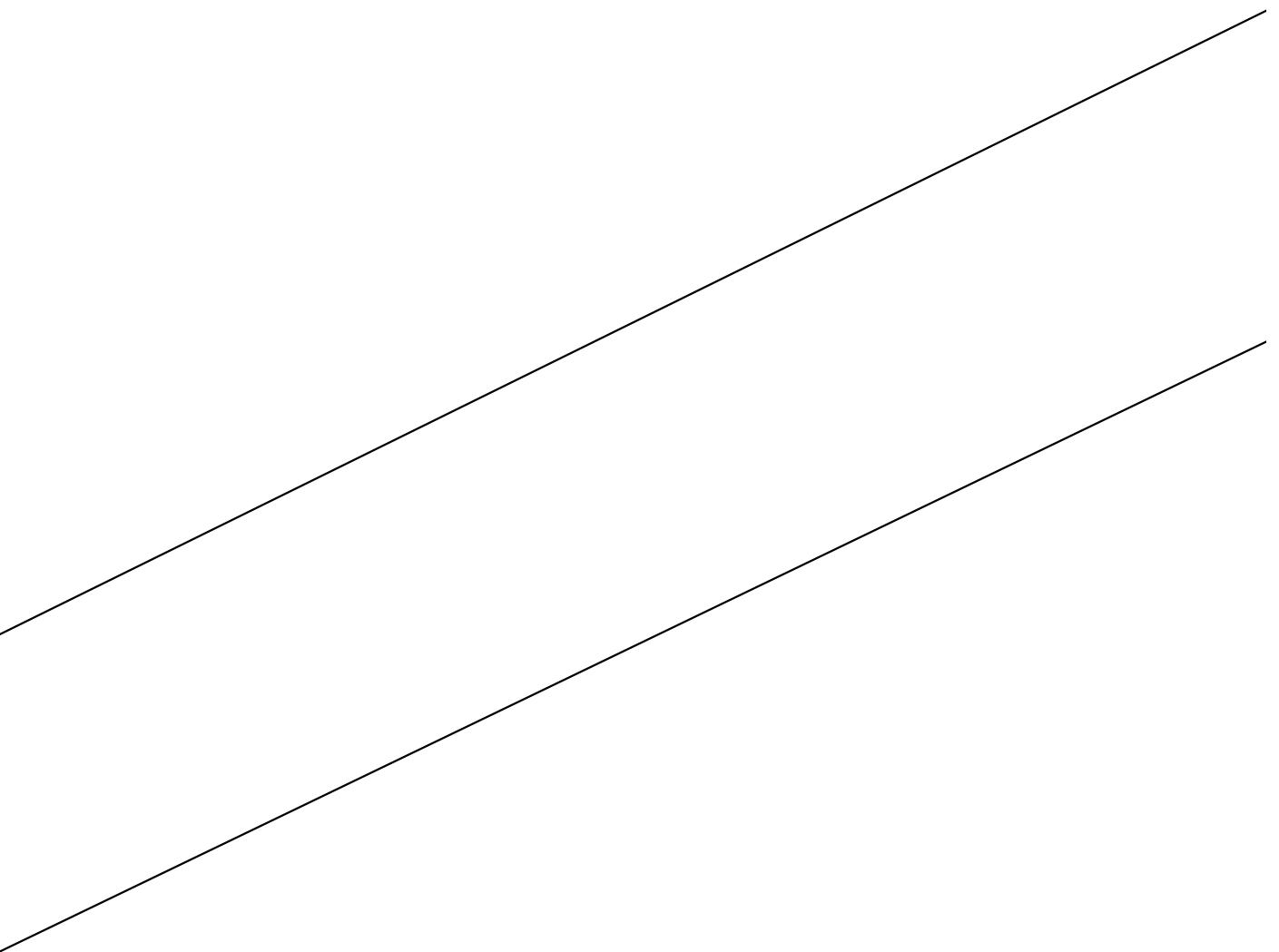


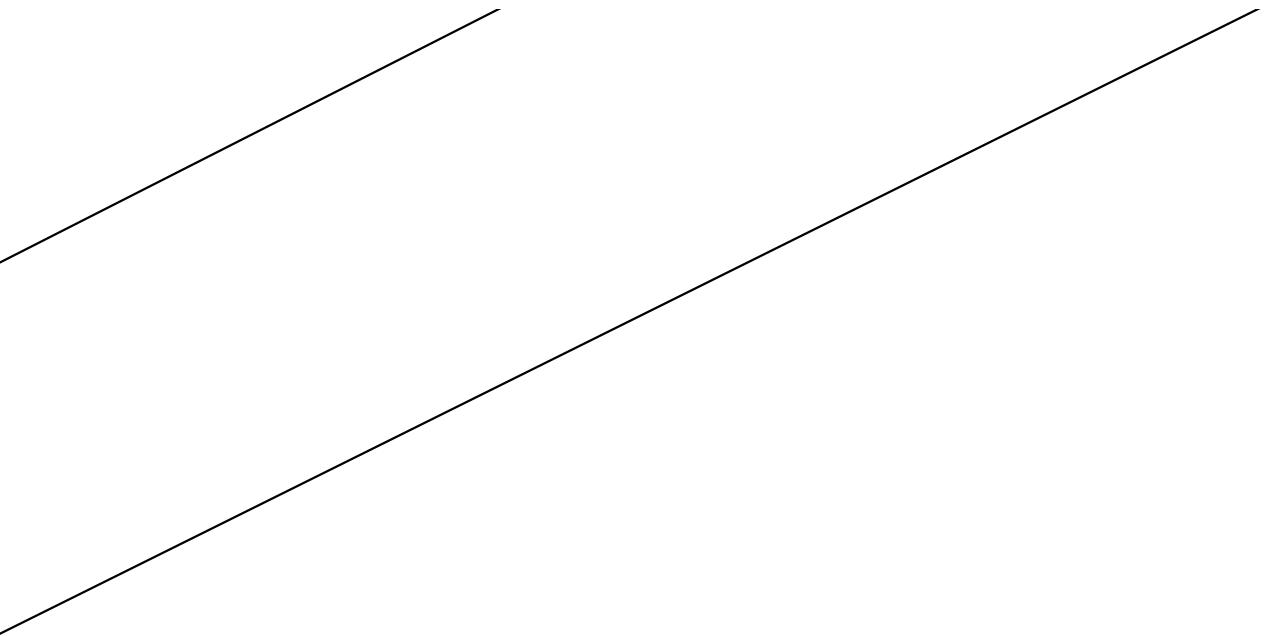












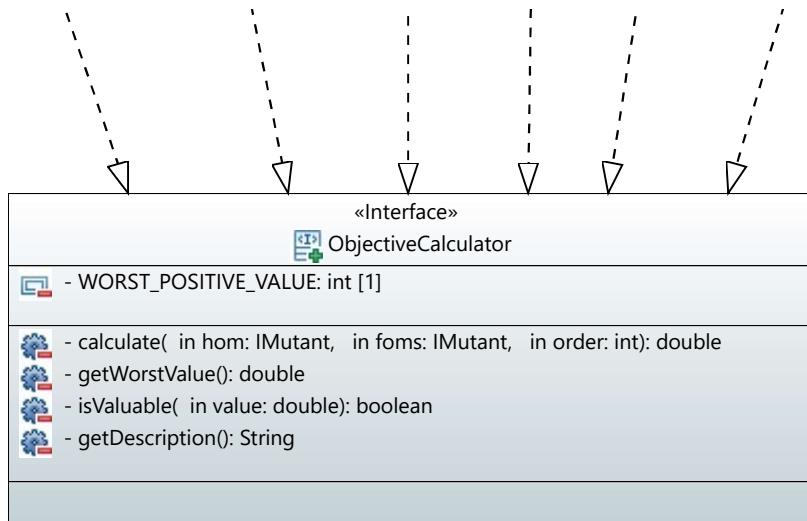
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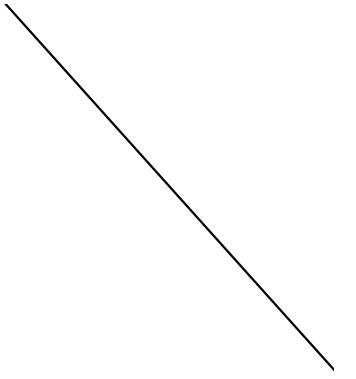

```
[- countingMutants: boolean |  
[- mutationPointIndex: int [1] |  
[- mutantIndex: int [1] |  
[- mutationPoints: IMutationP |  
[- mutationPointsCount: int [1] |  
[- mutantLineNumber: int [1] |  
[- mutantDescription: String [1] |  
[- mutatedMethodName: Stri |  
[- mutatedMethodDescriptor:  
+ className: String [1]
```

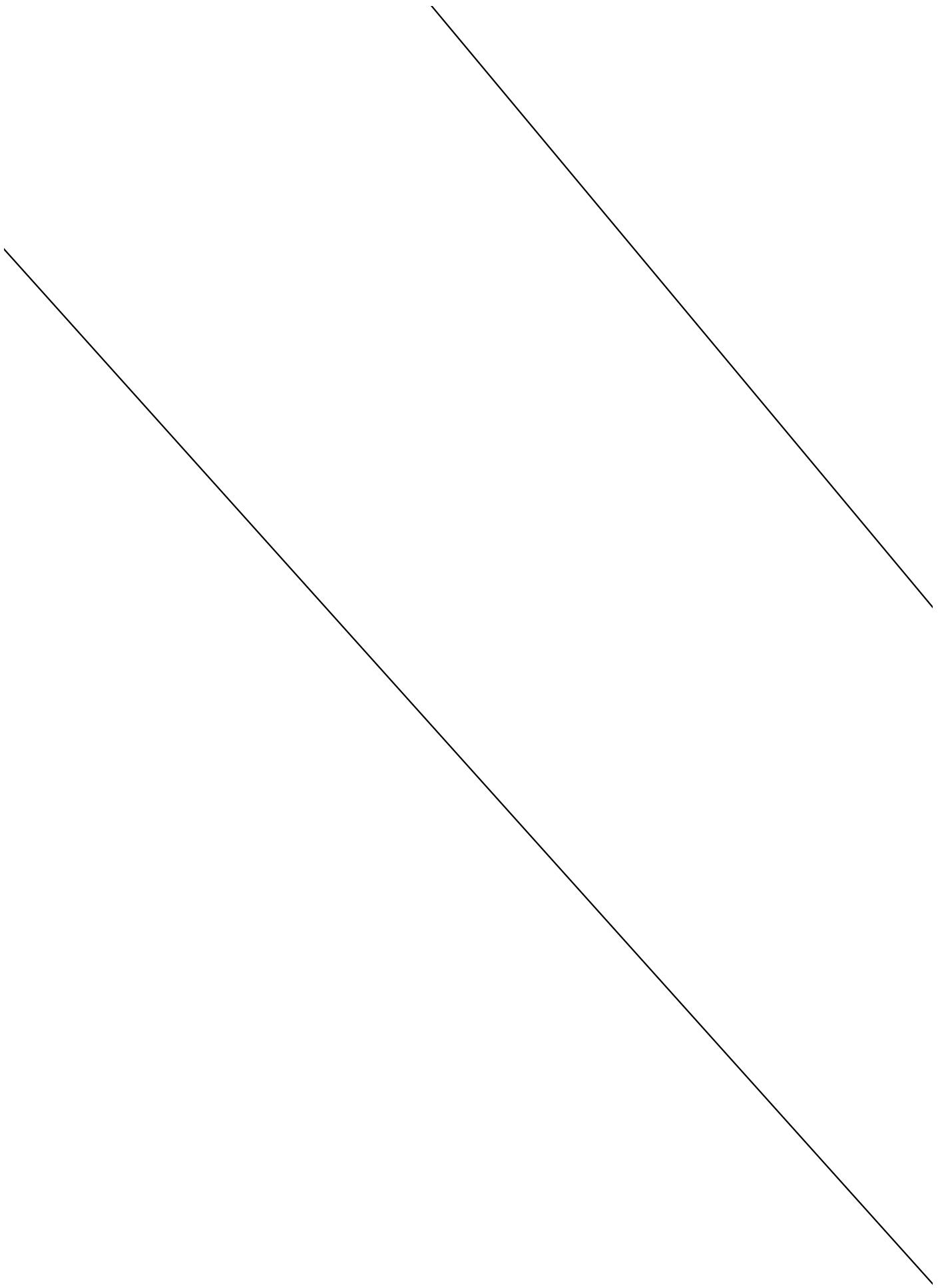
```
«Create» + AbstractClassMut  
+ getMutationPoints(): IMuta  
+ getMutantLineNumber(): ir  
+ getMutantDescription(): Sti  
+ getMethodDescriptor(): Str  
+ getMethodName(): String  
+ setMutantLineNumber( in  
+ setMutantDescription( in c  
+ setMutatedMethodName(  
+ setMutatedMethodDescrip  
+ isCountingMutants(): boole  
+ shouldMutate(): boolean  
+ getMutantIndex(): int  
+ nextMutationPoint()  
+ nextMutationPoint( in mut  
+ getMutantLineNumber()  
+ getMutantLineNumber( in  
+ getMutantDescription()  
+ getMutantDescription( in r  
+ getMethodDescriptor()  
+ getMethodDescriptor( in r  
+ getMethodName()  
+ getMethodName( in null: ·  
+ getMutationPoints()  
+ getMutationPoints( in null:  
+ getMutationPoints(): IMuta  
+ getMutationPoints(): IMuta  
+ getMutationPoints(): IMuta
```

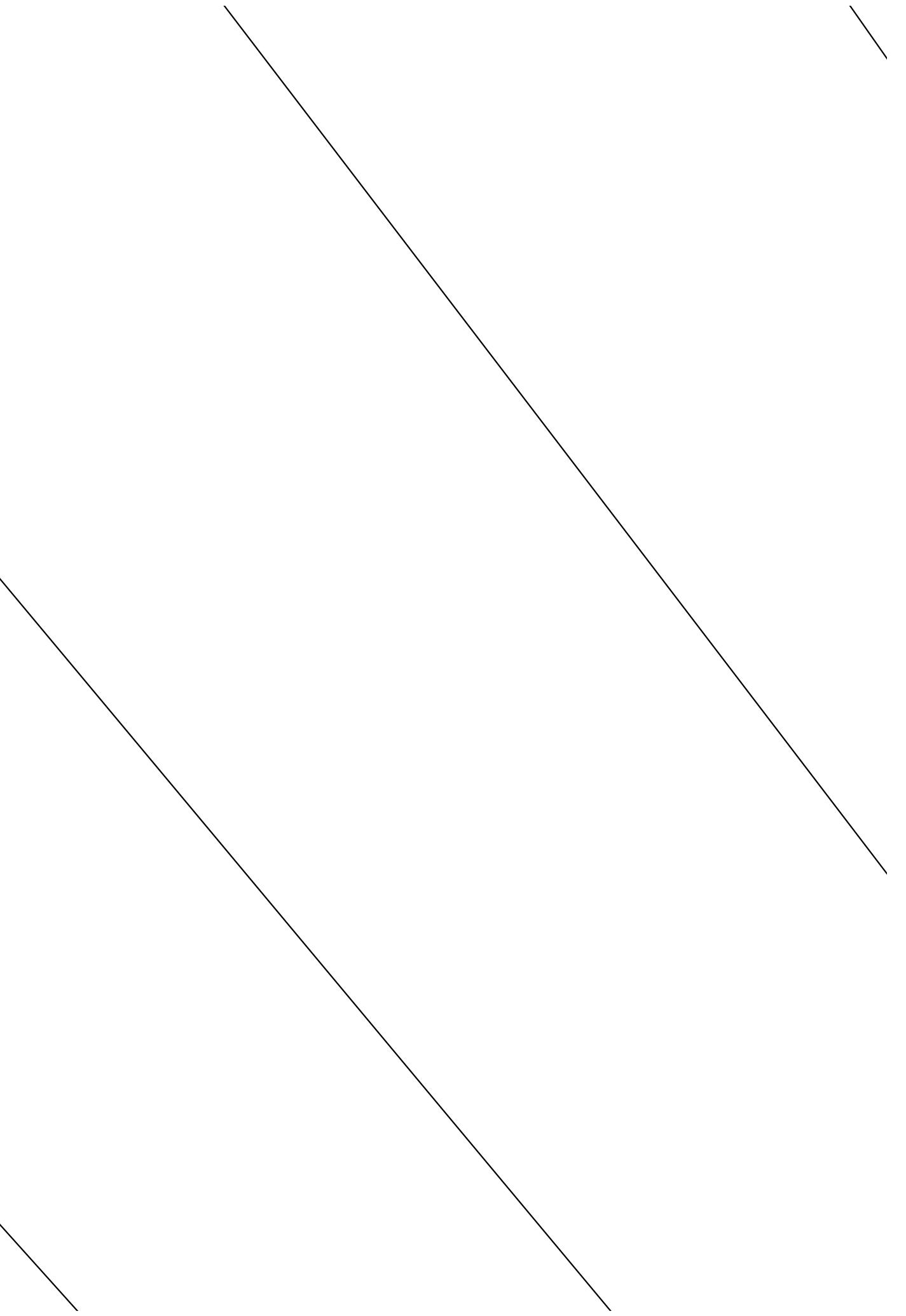
```
AbstractClassMutater  
getMutationPoints  
getMutantLineNumber  
getMutantDescription  
getMethodDescriptor  
getMethodName  
setMutantLineNumber  
setMutantDescription  
setMutatedMethodName  
setMutatedMethodDescriptor  
isCountingMutants  
shouldMutate  
getMutantIndex  
nextMutationPoint  
nextMutationPoint+
```

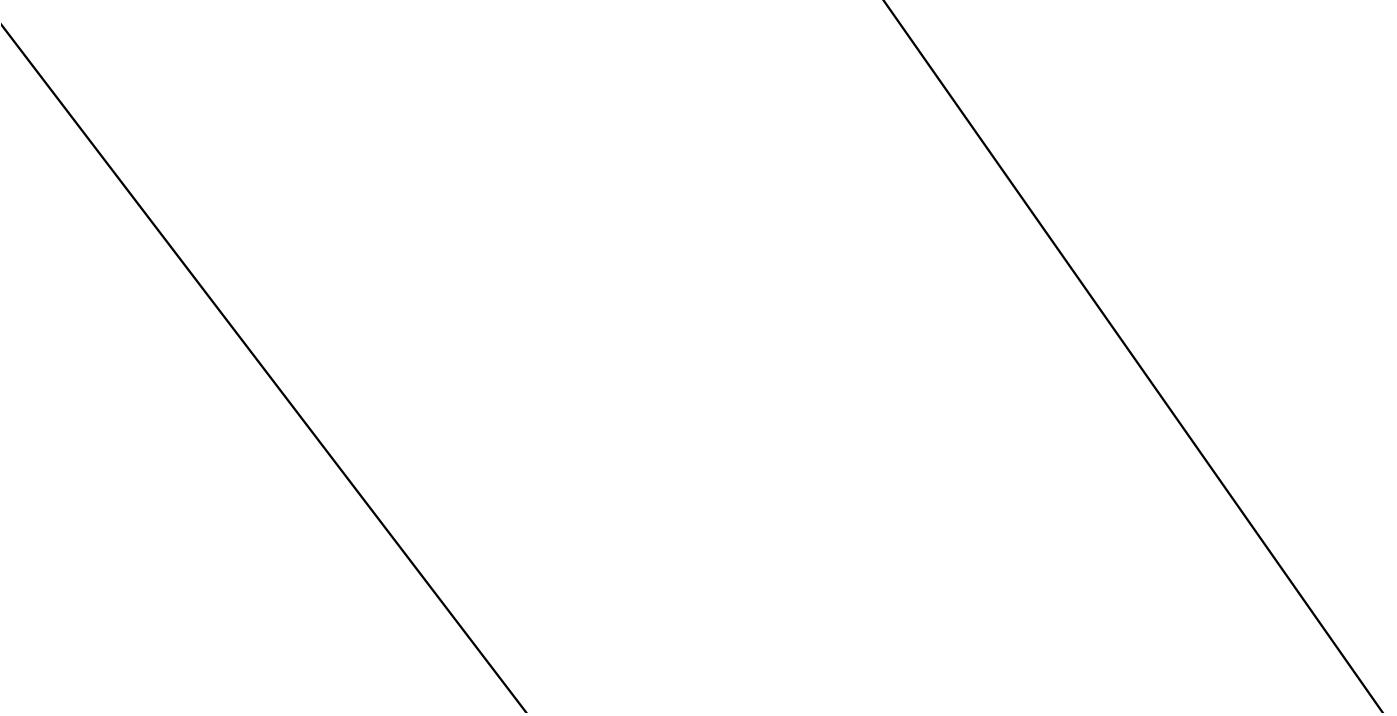
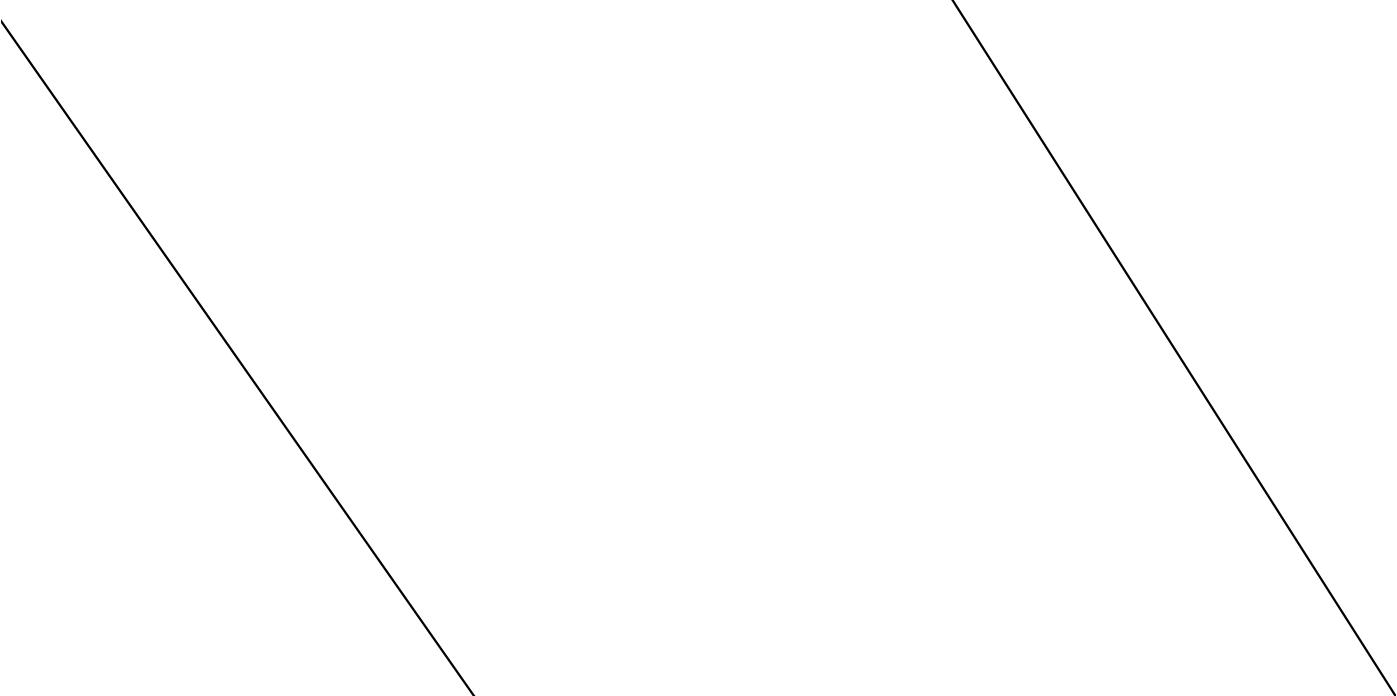


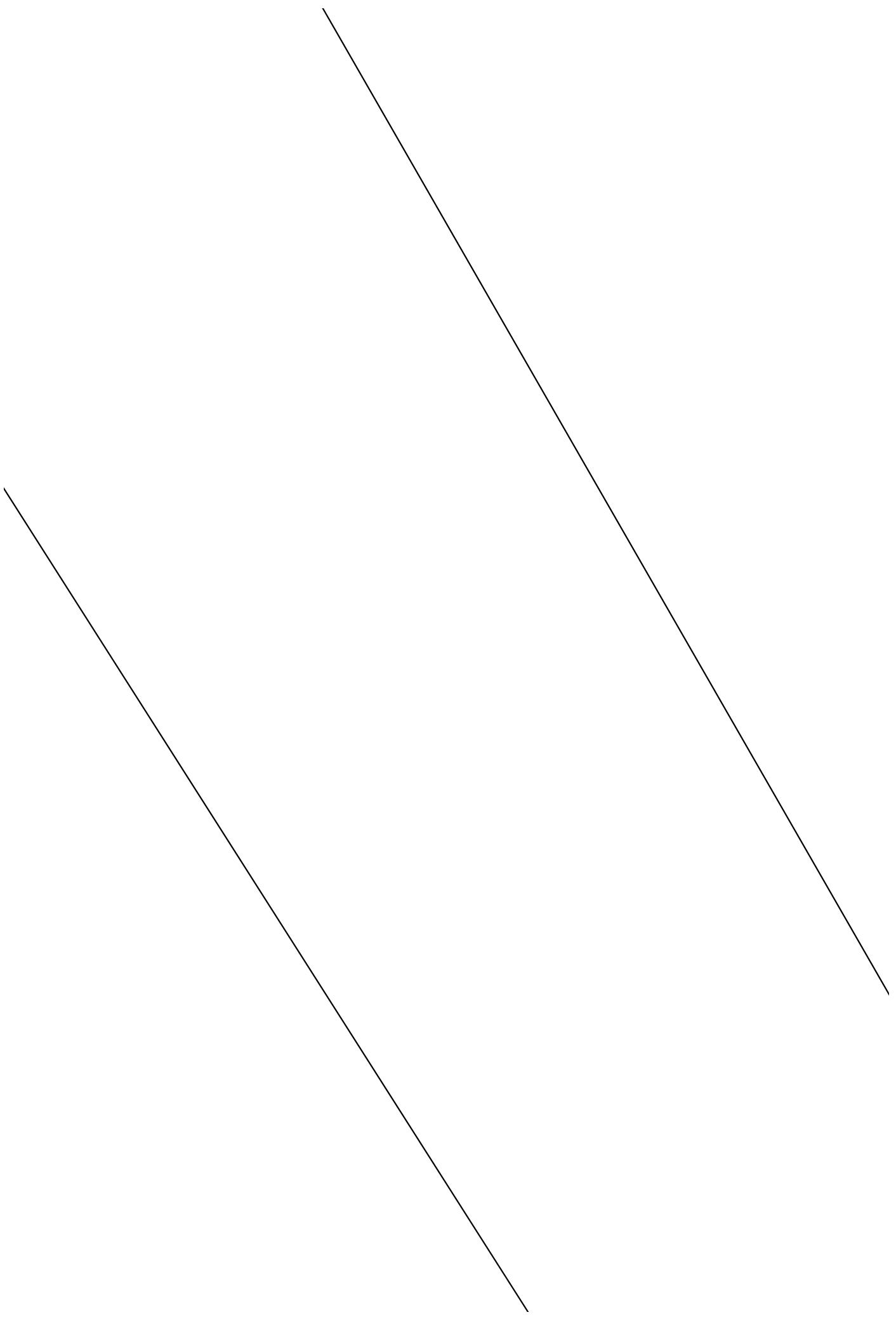




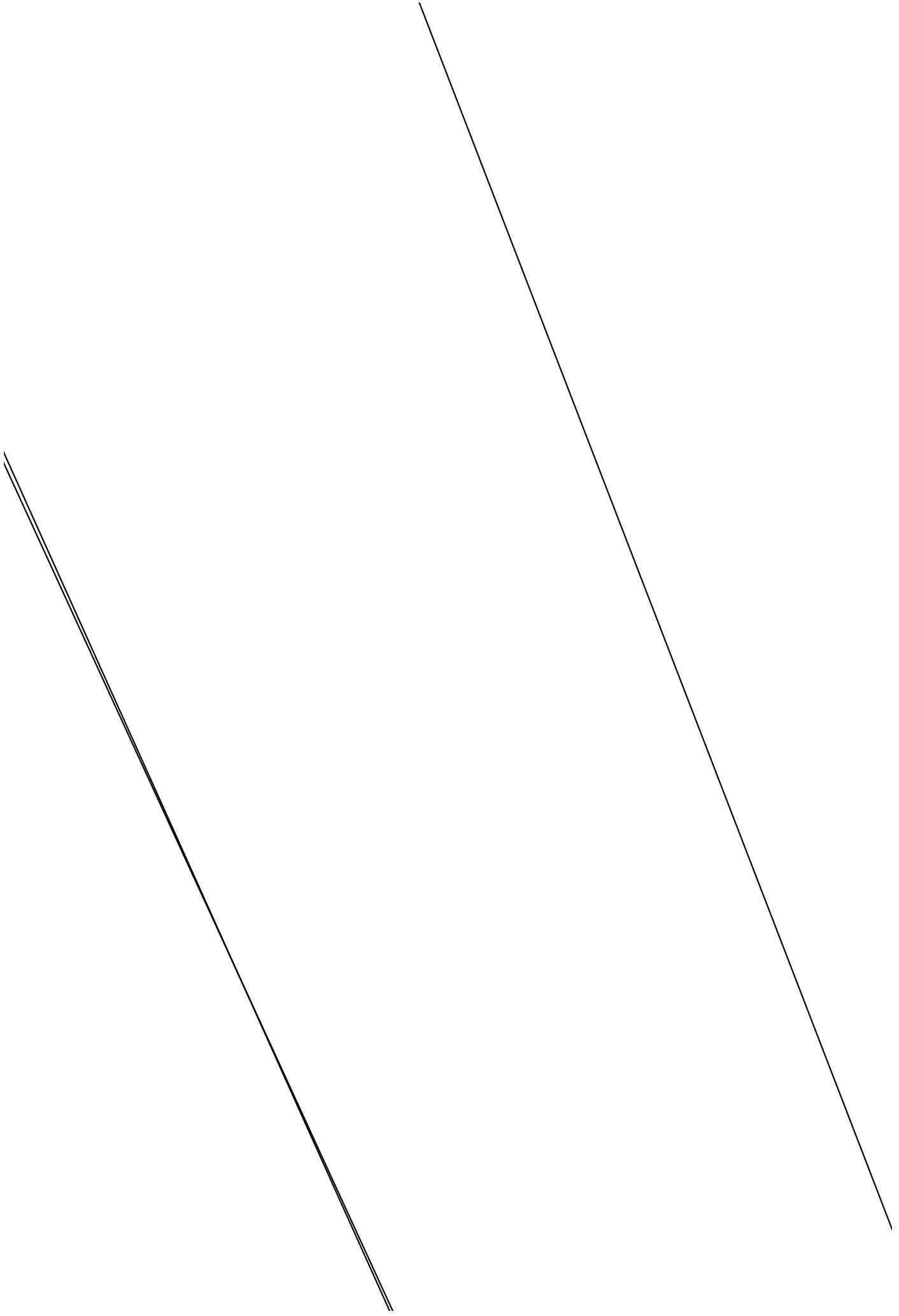


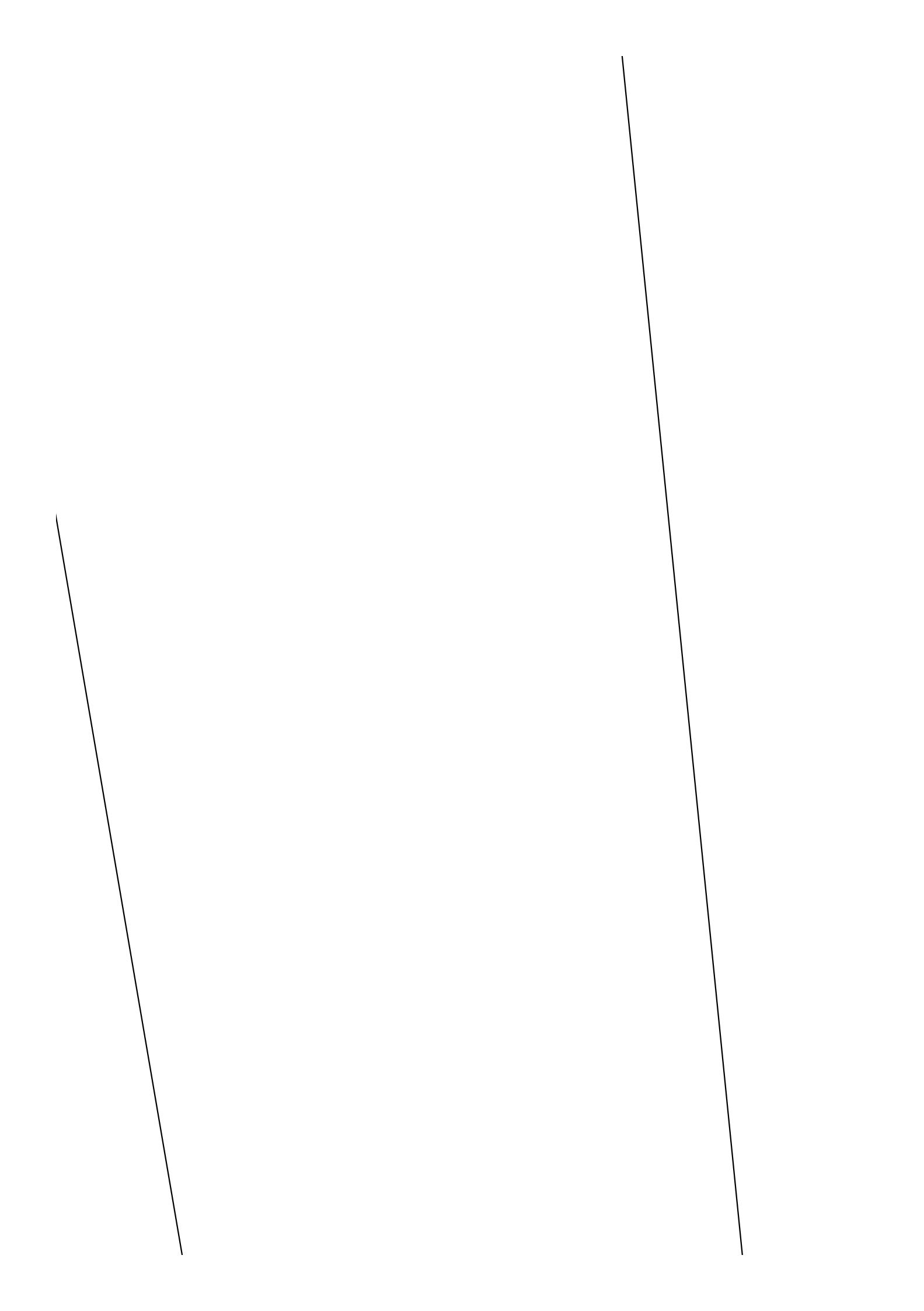




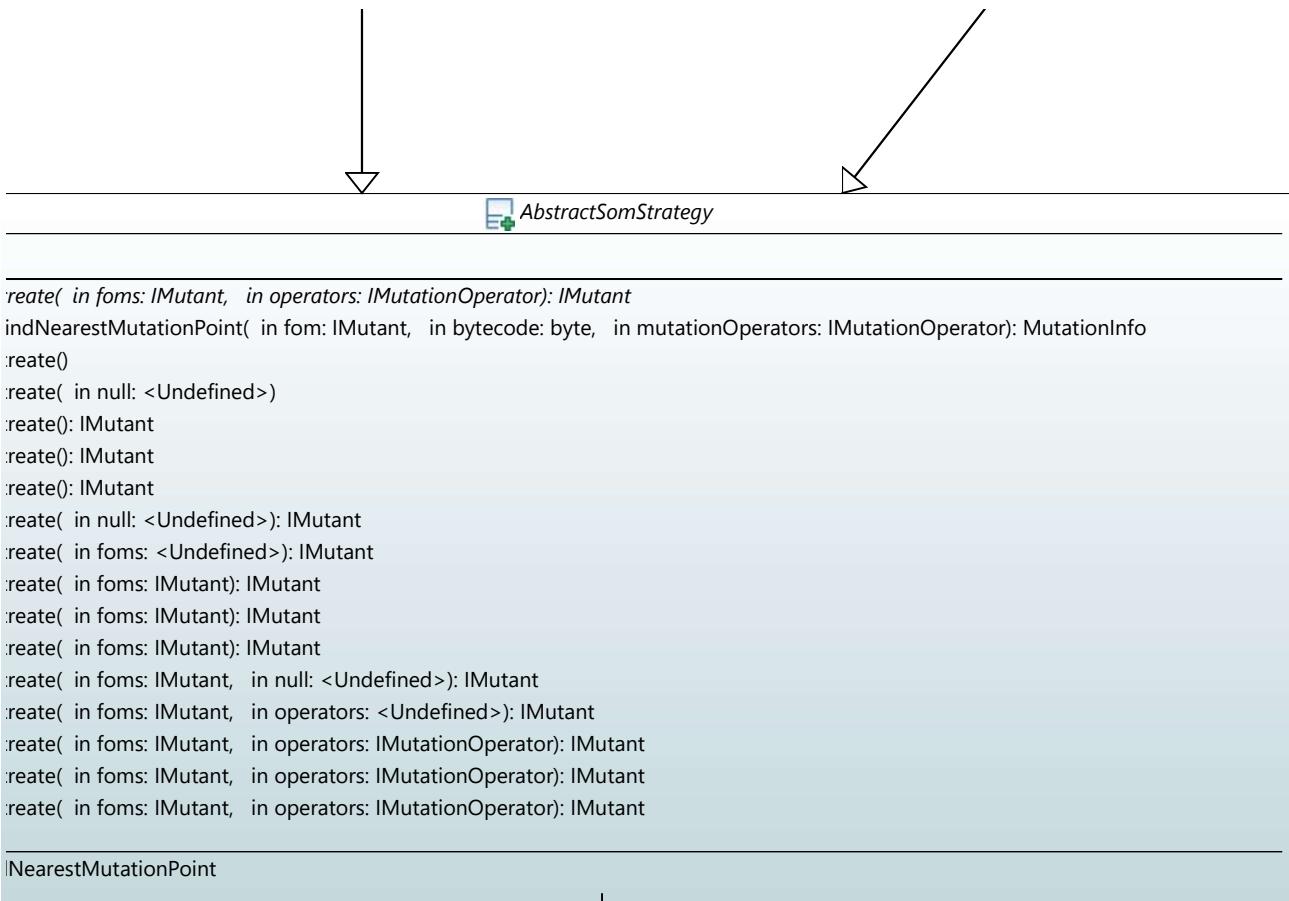








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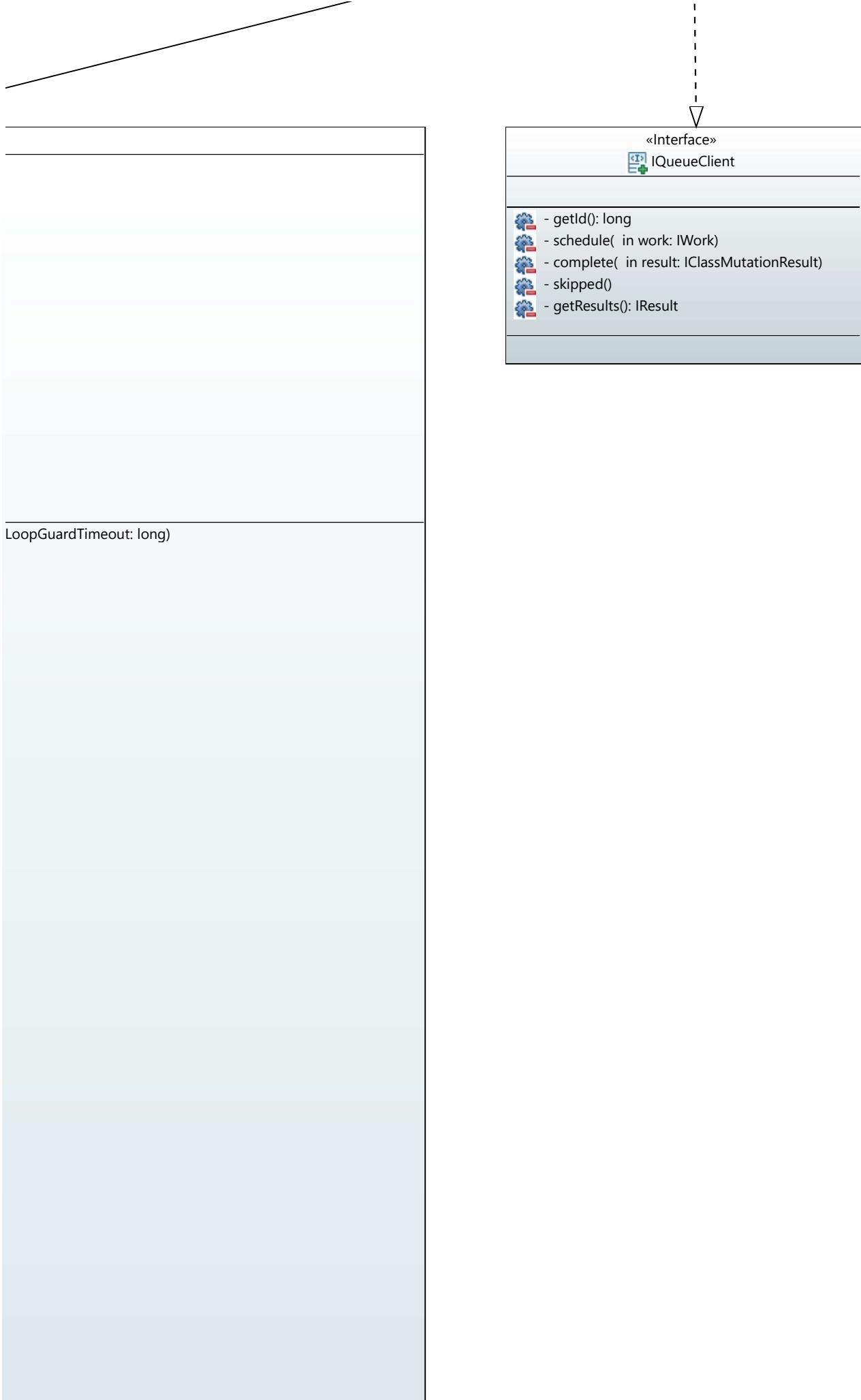
- serialVersionUID: long [1]
- targetClass: ITargetClass [1]
- classpath: String [*]
- envFactory: IEnvironmentFactory [1]
- testerFactory: ITesterFactory [1]
- operatorsFactory: IMutationOperatorsFactory [1]
- maxInfiniteLoopGuardTimeout: long [1]
«Transient» - cache: IBytecodeCache [1]
«Transient» - operators: IMutationOperator [*]
«Transient» - tester: ITester [1]
«Transient» - kind: ClassKind [1]
- workspace: String [1]
«Transient» - statistic: IDurationStatistic [1]
- evaluator: IMutantEvaluator [1]
- resultFormatter: MutationResultFormatter [1]
- LOGGER: Logger [1]

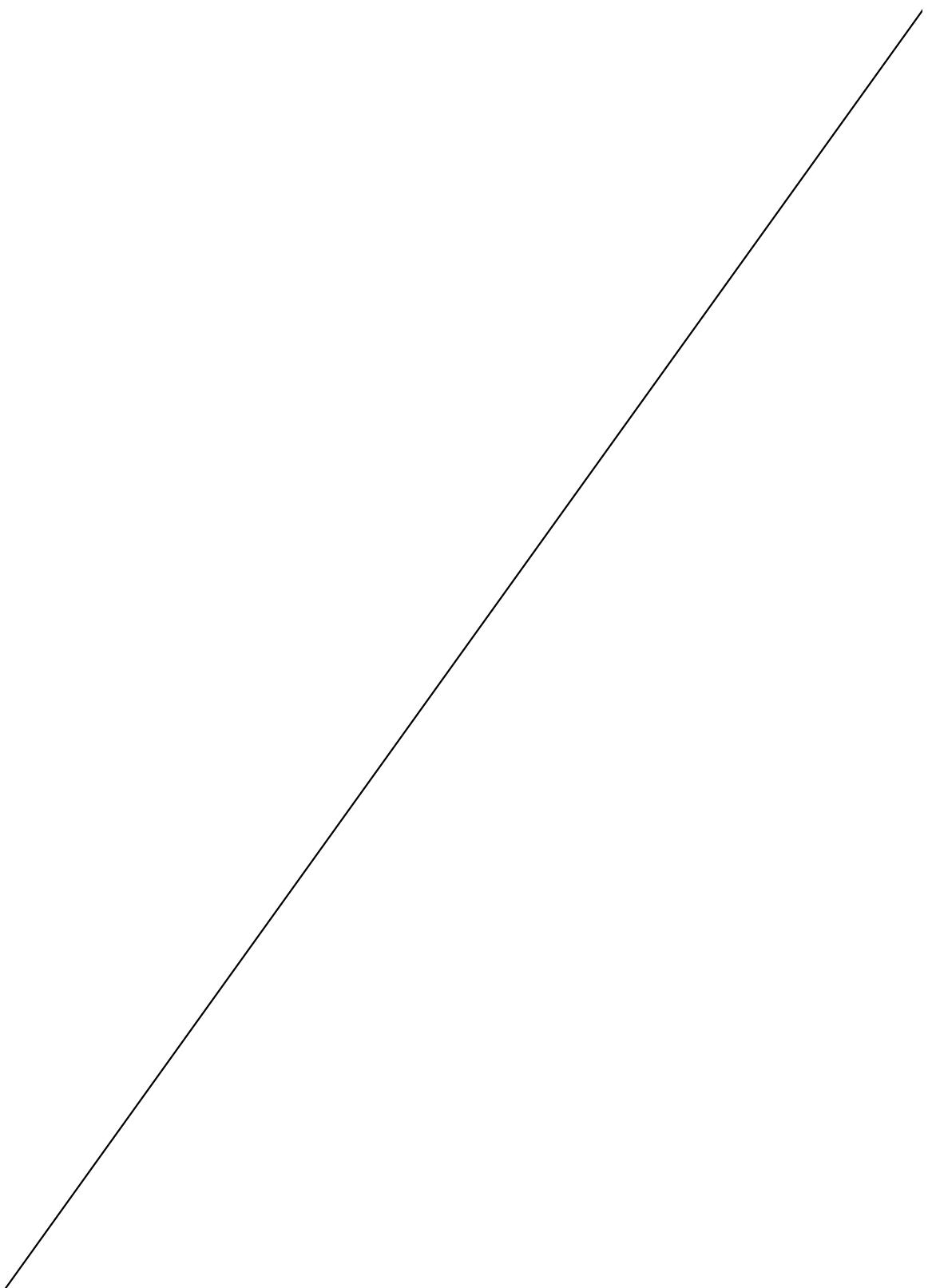
«Create» + MutationWork( in clientId: long, in retries: int, in resultFormatter: MutationResultFormatter, in targetClass: ITargetClass, in classpath: String)
+ run( in workspace: Object): IClassMutationResult
# collectSummaryData(): MutationSummary
# computeInitialTestsDuration()
# init( in workspace: String)
# initReset()
# mutate(): IMutant
# getBytecode(): byte
# generateFoms( in bytecode: byte): IMutant
- mutate( in bytecode: byte, in operator: IMutationOperator, in point: IMutationPoint): IMutantBytecode
# getEvaluator(): IMutantEvaluator
+ getStatistic(): IDurationStatistic
+ setStatistic( in statistic: IDurationStatistic)
+ getClassKind(): ClassKind
+ setKind( in kind: ClassKind)
+ getTargetClass(): ITargetClass
+ getOperators(): IMutationOperator
+ setOperators( in operators: IMutationOperator)
+ getCACHE(): IBytecodeCache
+ setCache( in cache: IBytecodeCache)
+ getResultFormatter(): MutationResultFormatter
+ setResultFormatter( in resultFormatter: MutationResultFormatter)
+ getSerialVersionUID(): long
+ getClasspath(): String
+ getEnvFactory(): IEnvironmentFactory
+ getTesterFactory(): ITesterFactory
+ getOperatorsFactory(): IMutationOperatorsFactory
+ getMaxInfiniteLoopGuardTimeout(): long
+ getTester(): ITester
+ setTester( in tester: ITester)
+ setEvaluator( in evaluator: IMutantEvaluator)
+ getLOGGER(): Logger
+ getWorkspace(): String
«Create» + AbstractWork( in clientId: long, in retries: int)
+ getClientId(): long
«Synchronized» + canRetry(): boolean
+ getRetries(): int
+ getSerialVersionUID(): long
+ getClientId()
+ getClientId( in null: <Undefined>)

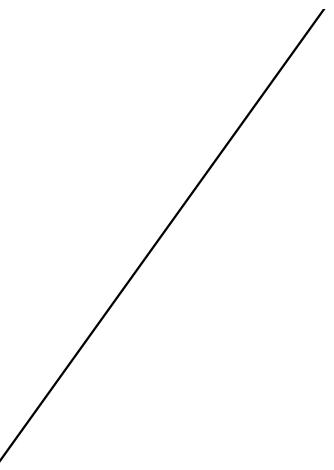
```



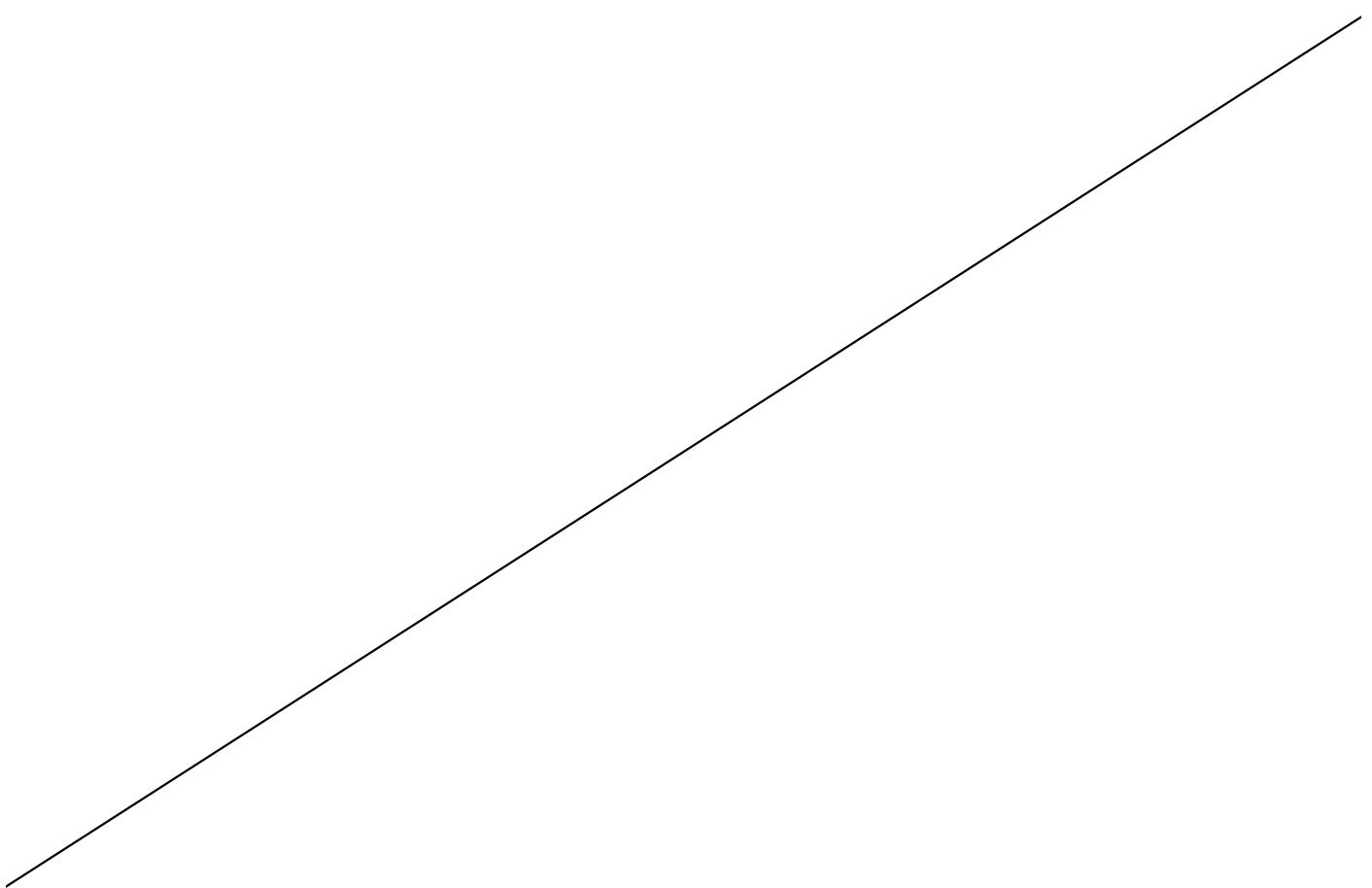
spath: String, in testerFactory: ITesterFactory, in envFactory: IEnvironmentFactory, in operatorsFactory: IMutationOperatorsFactory, in maxInfinite

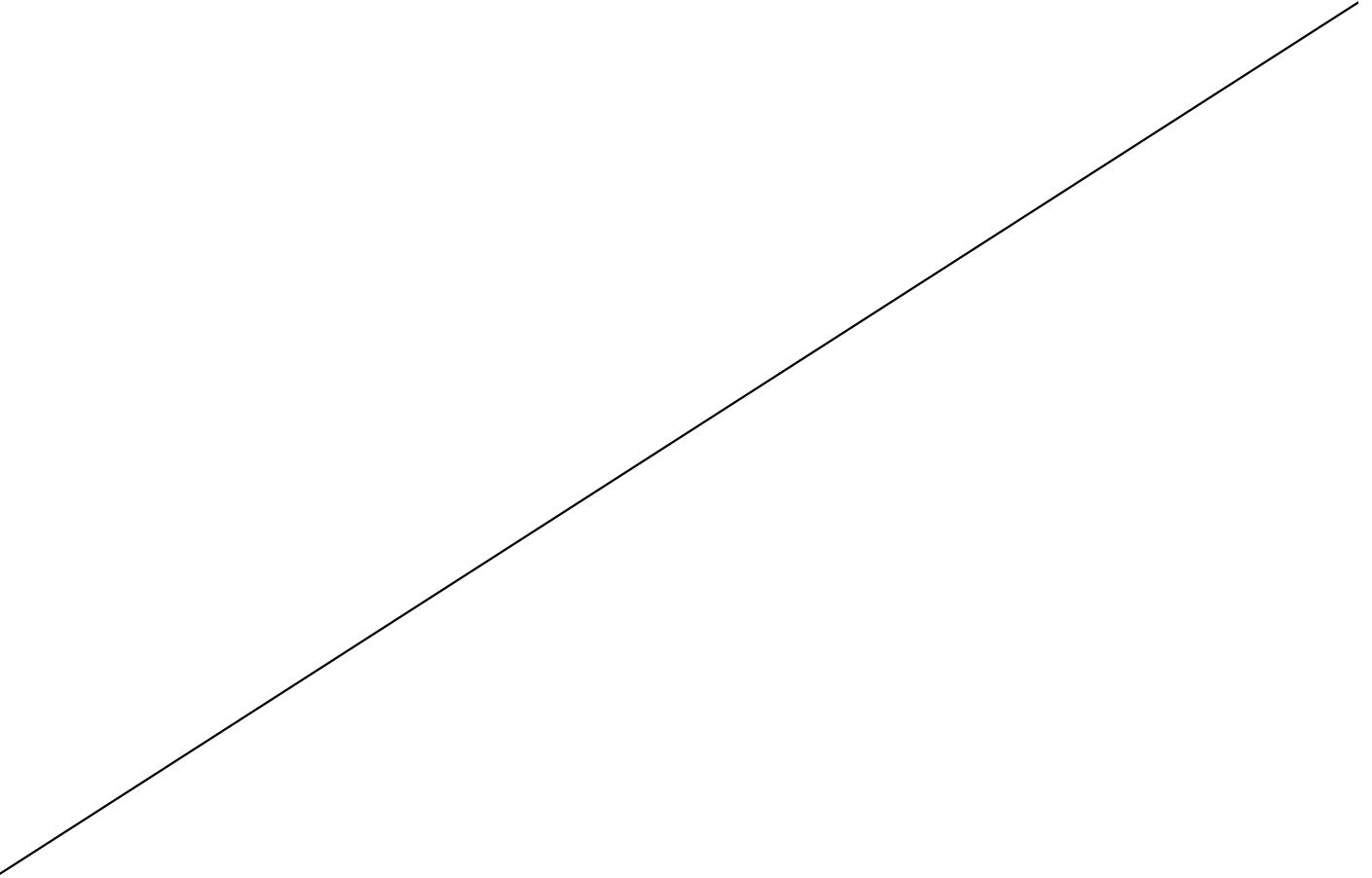






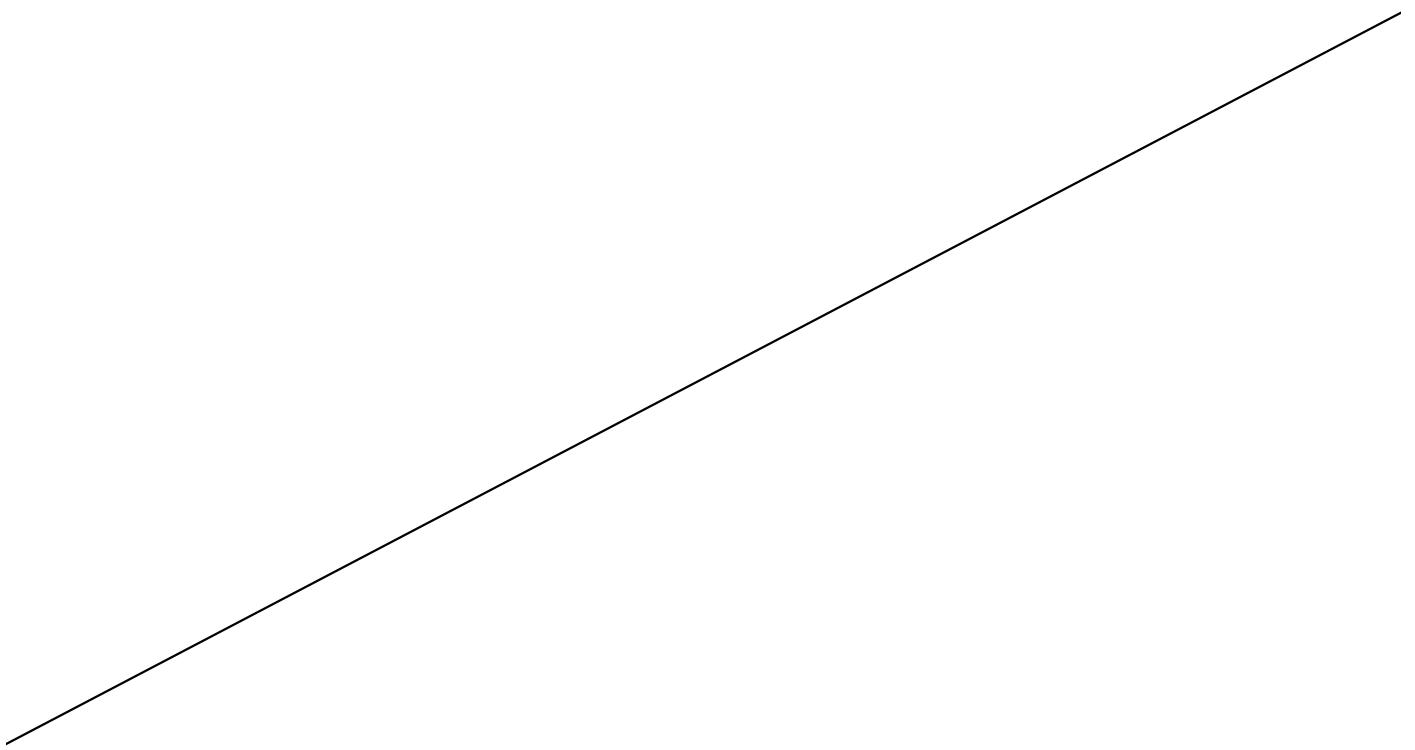


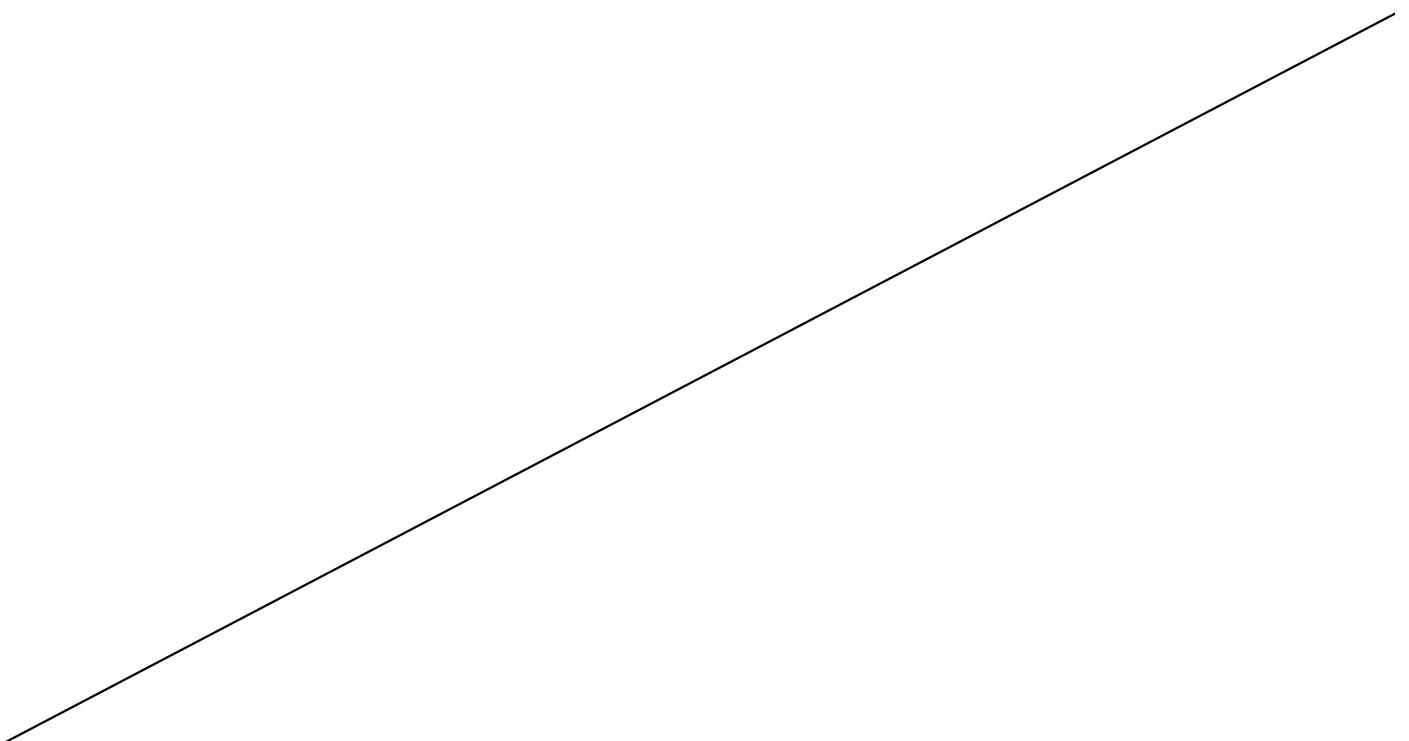


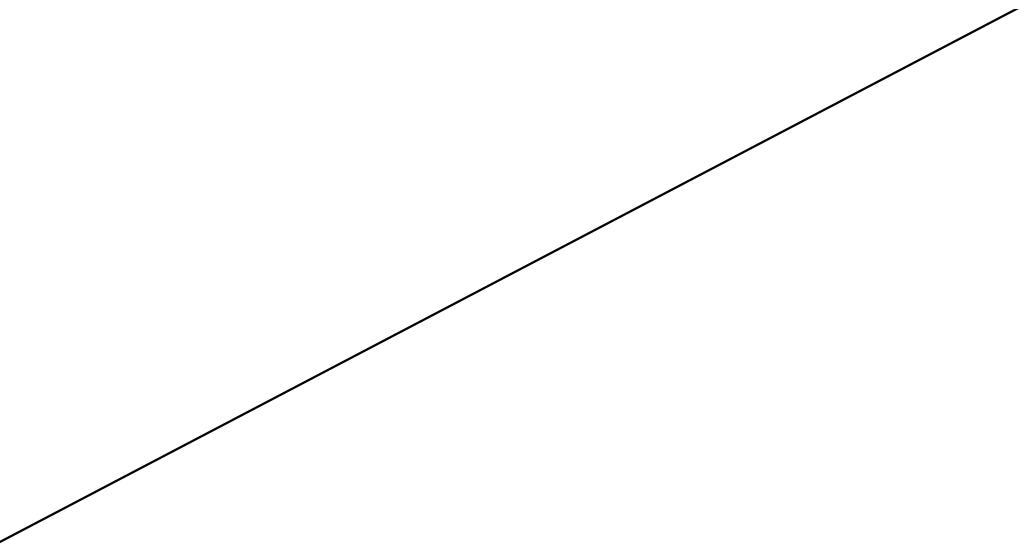


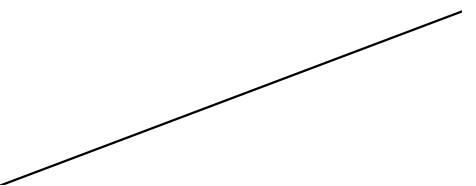
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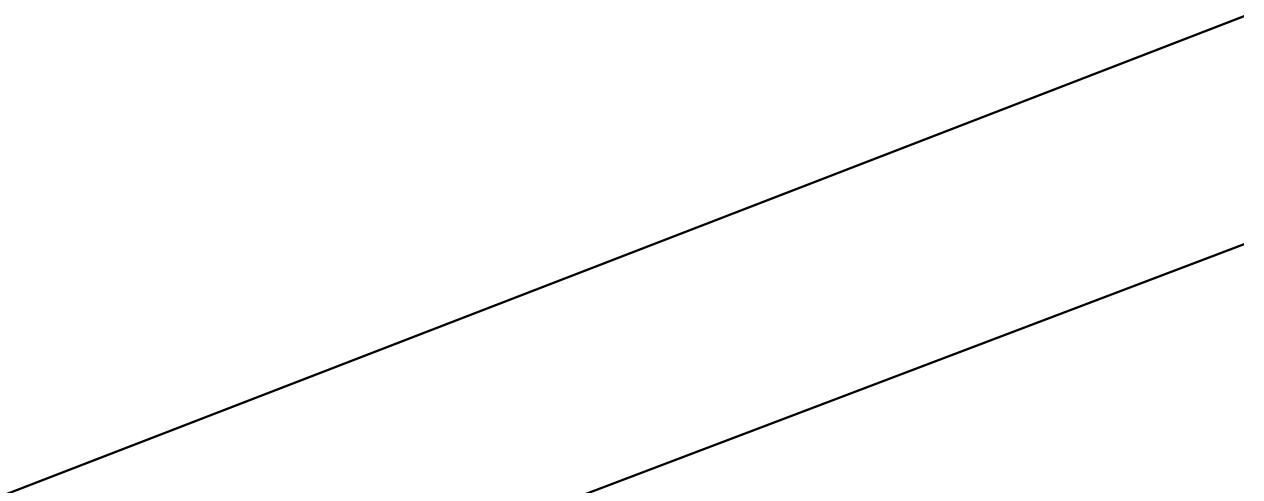
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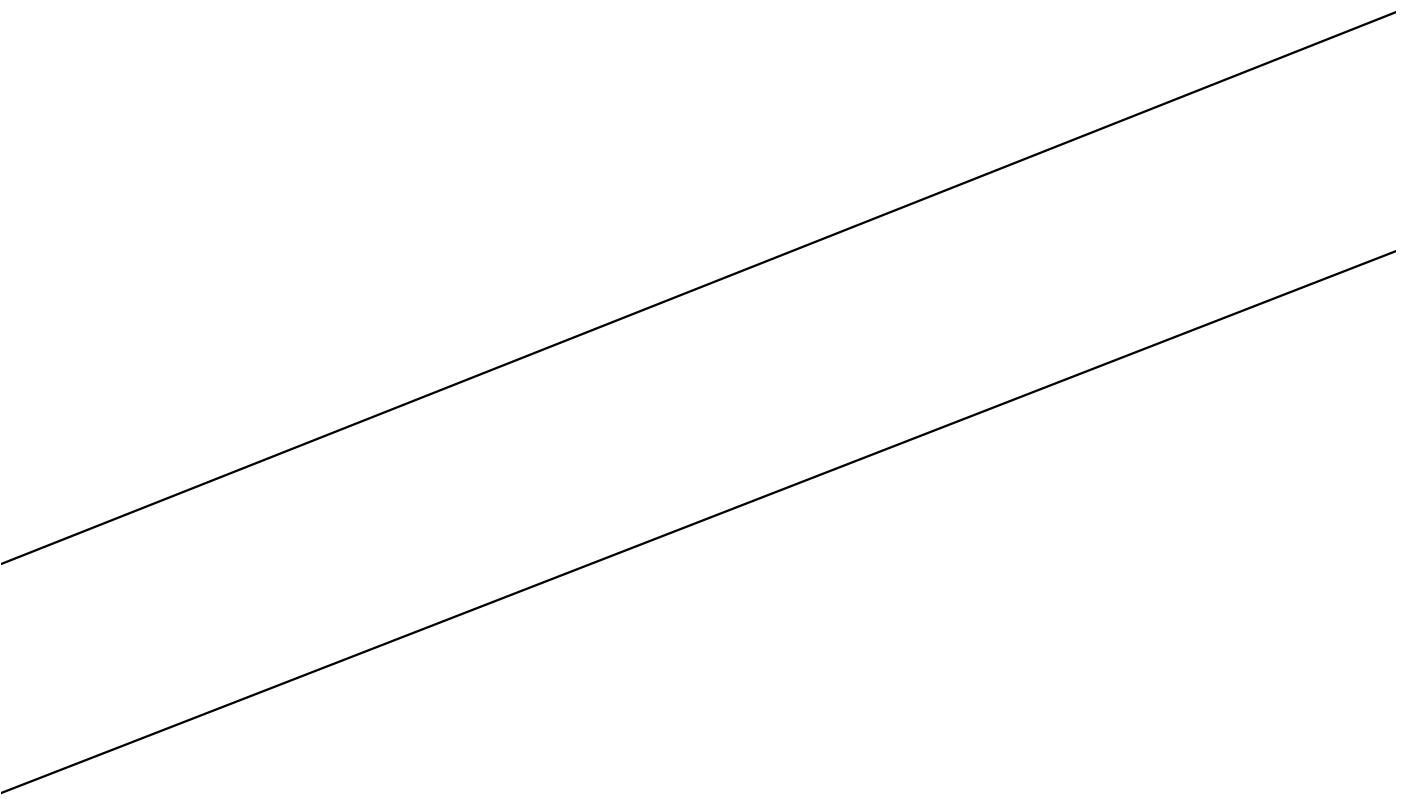


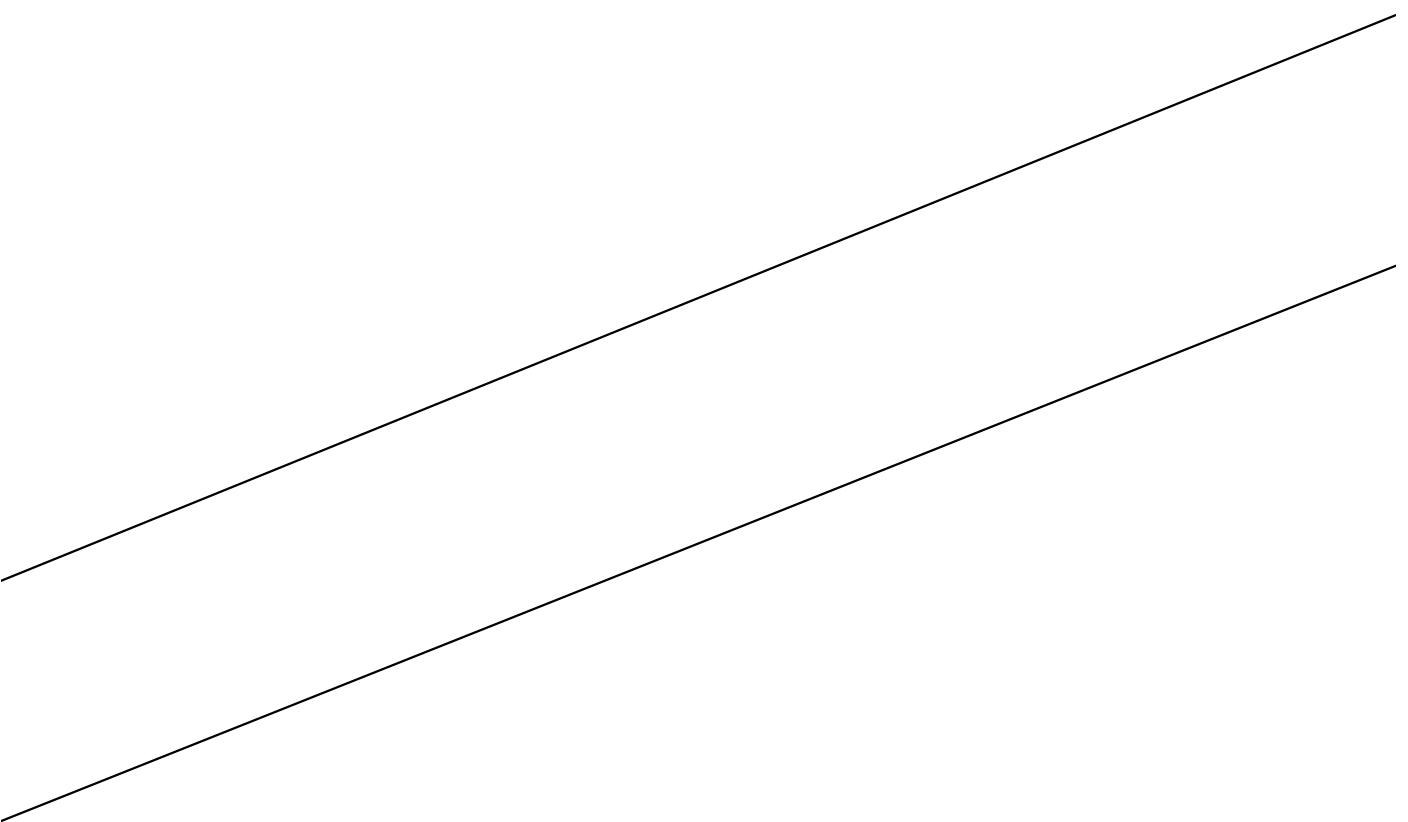


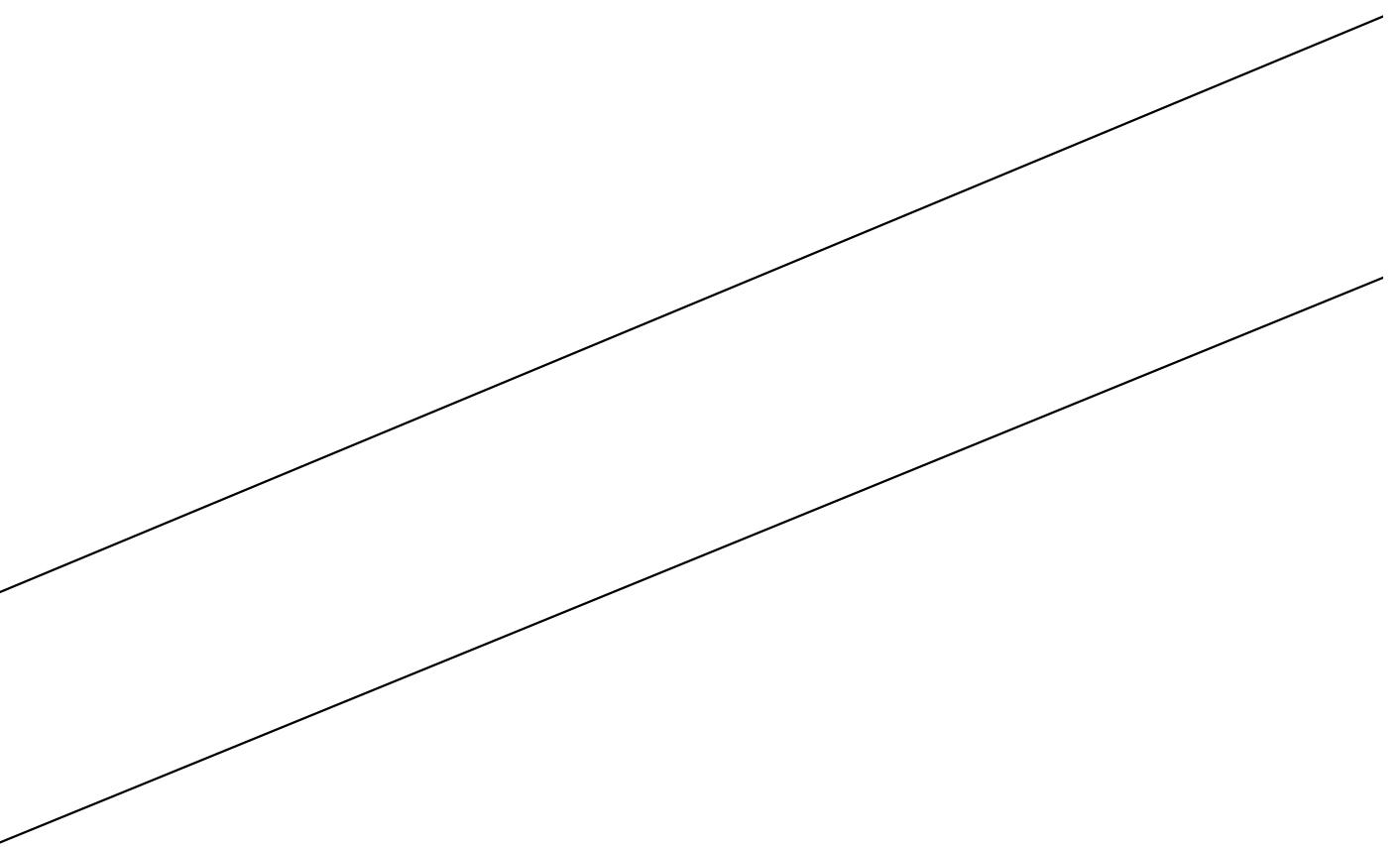


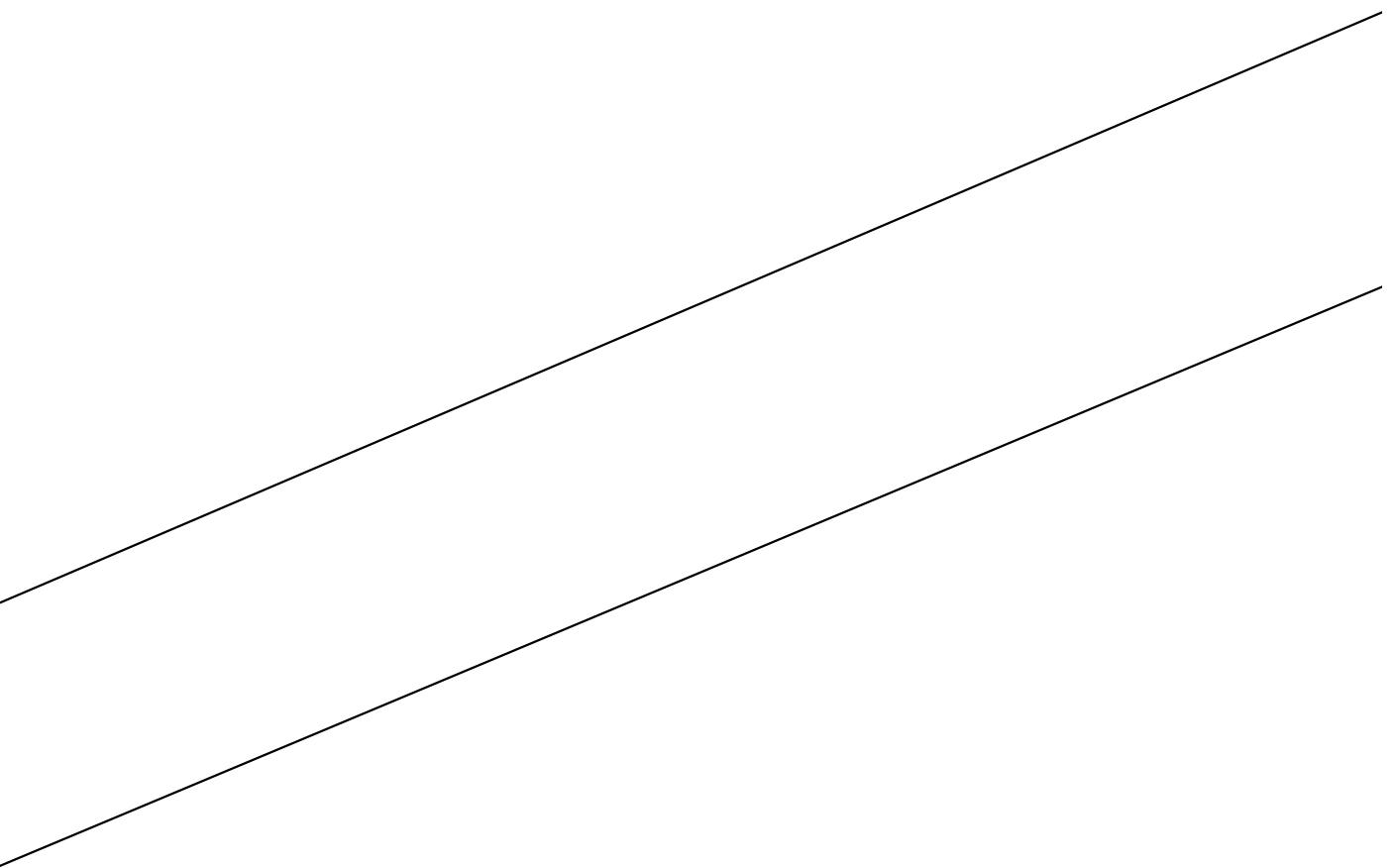


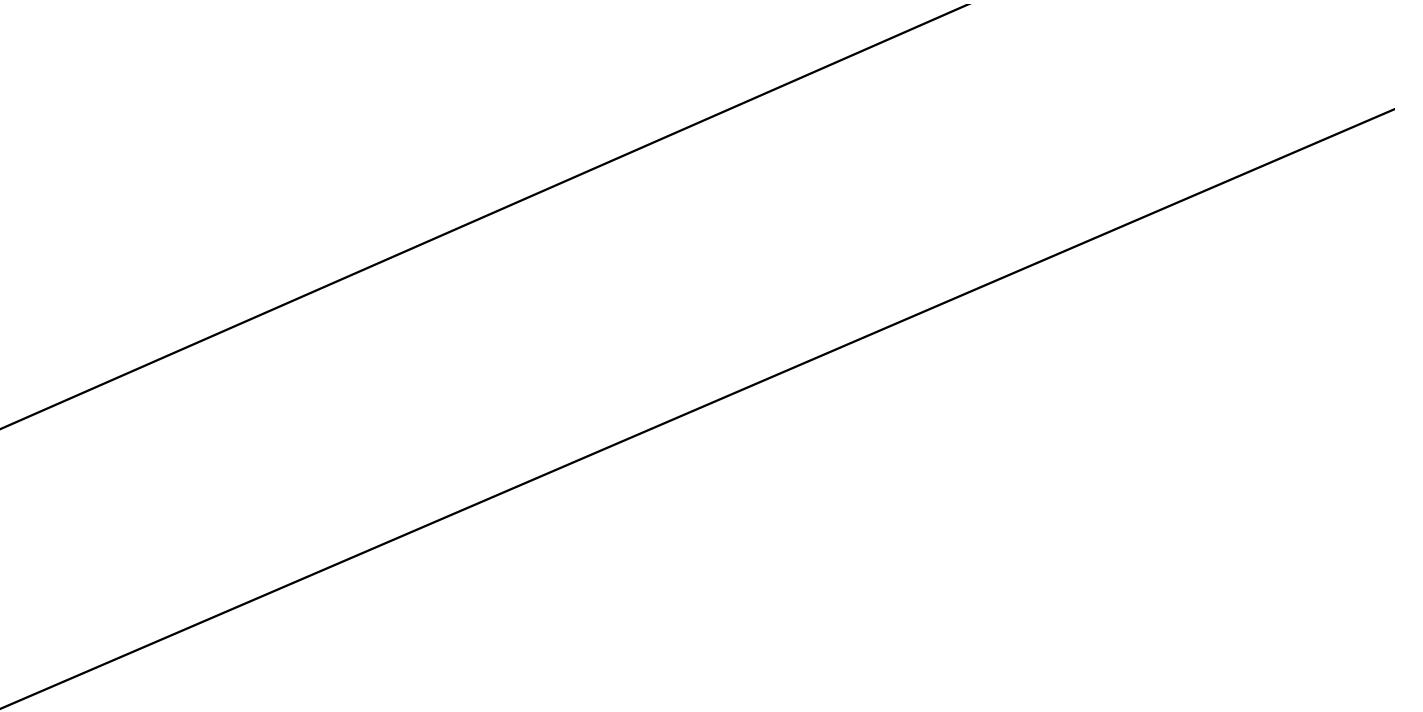


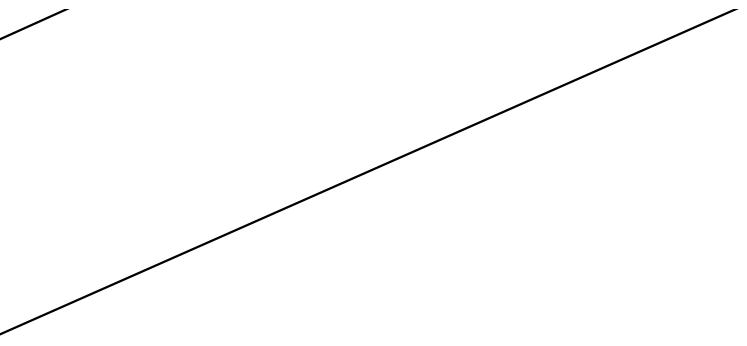




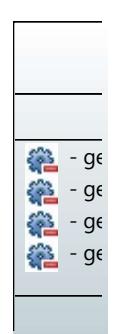


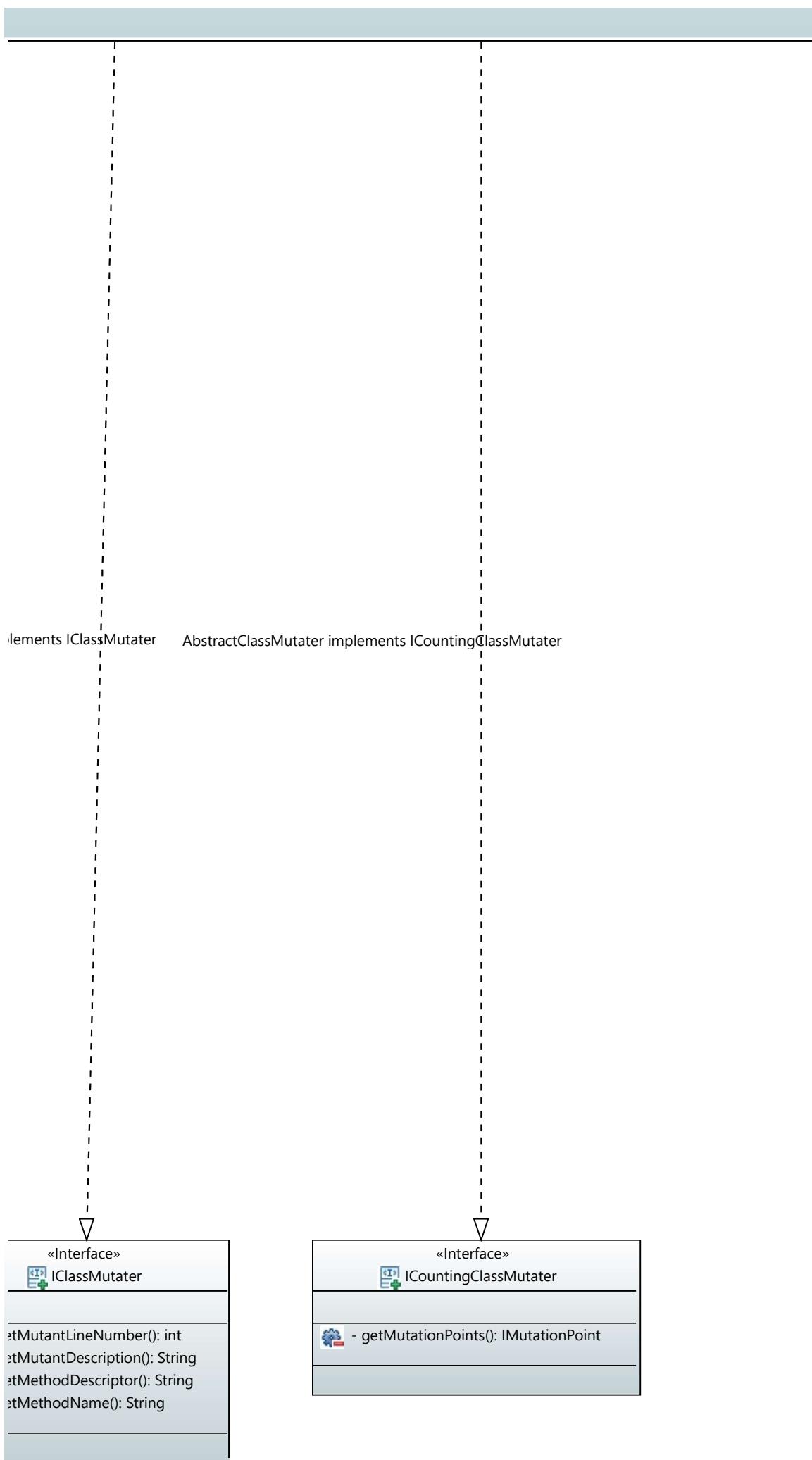


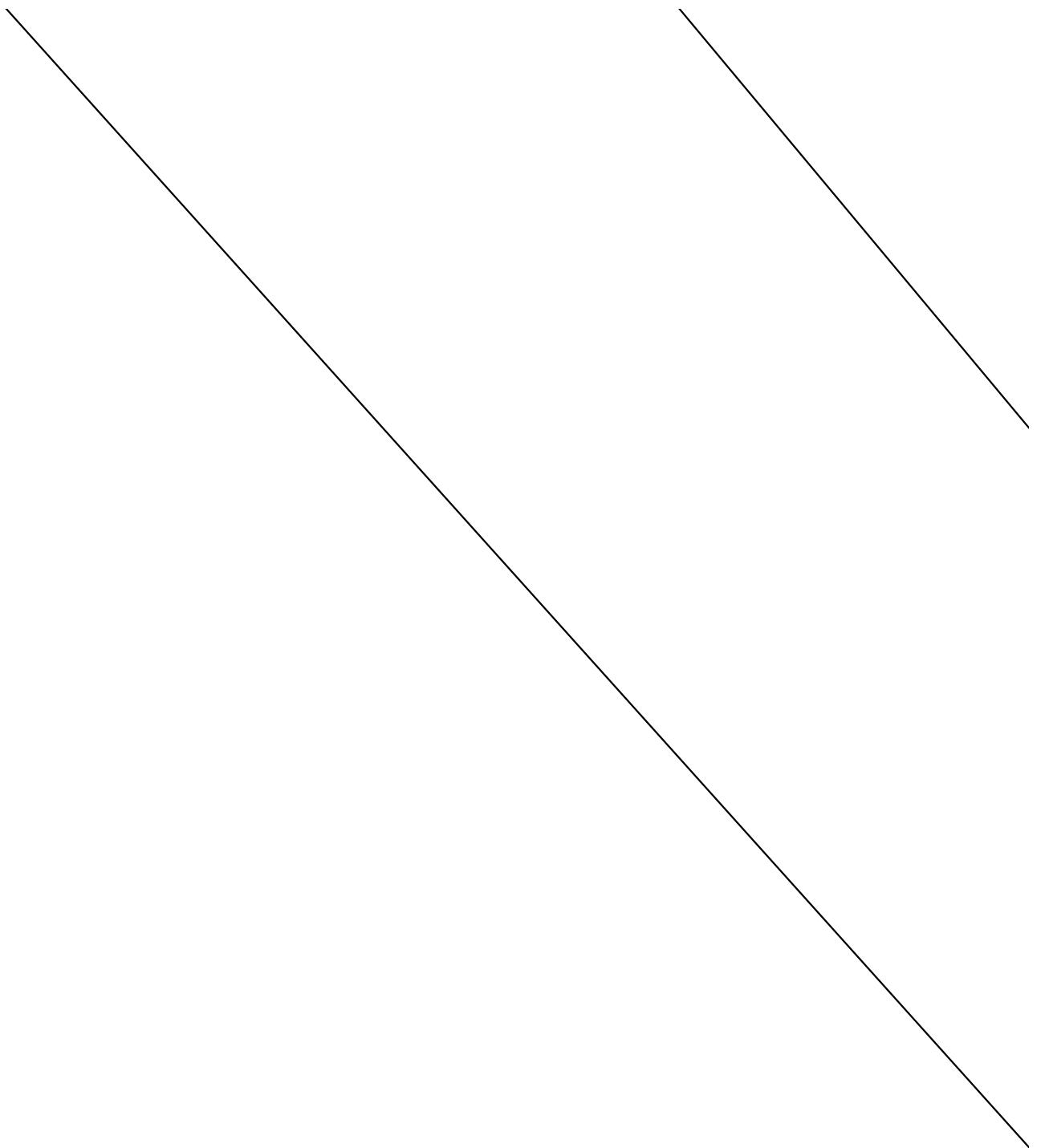


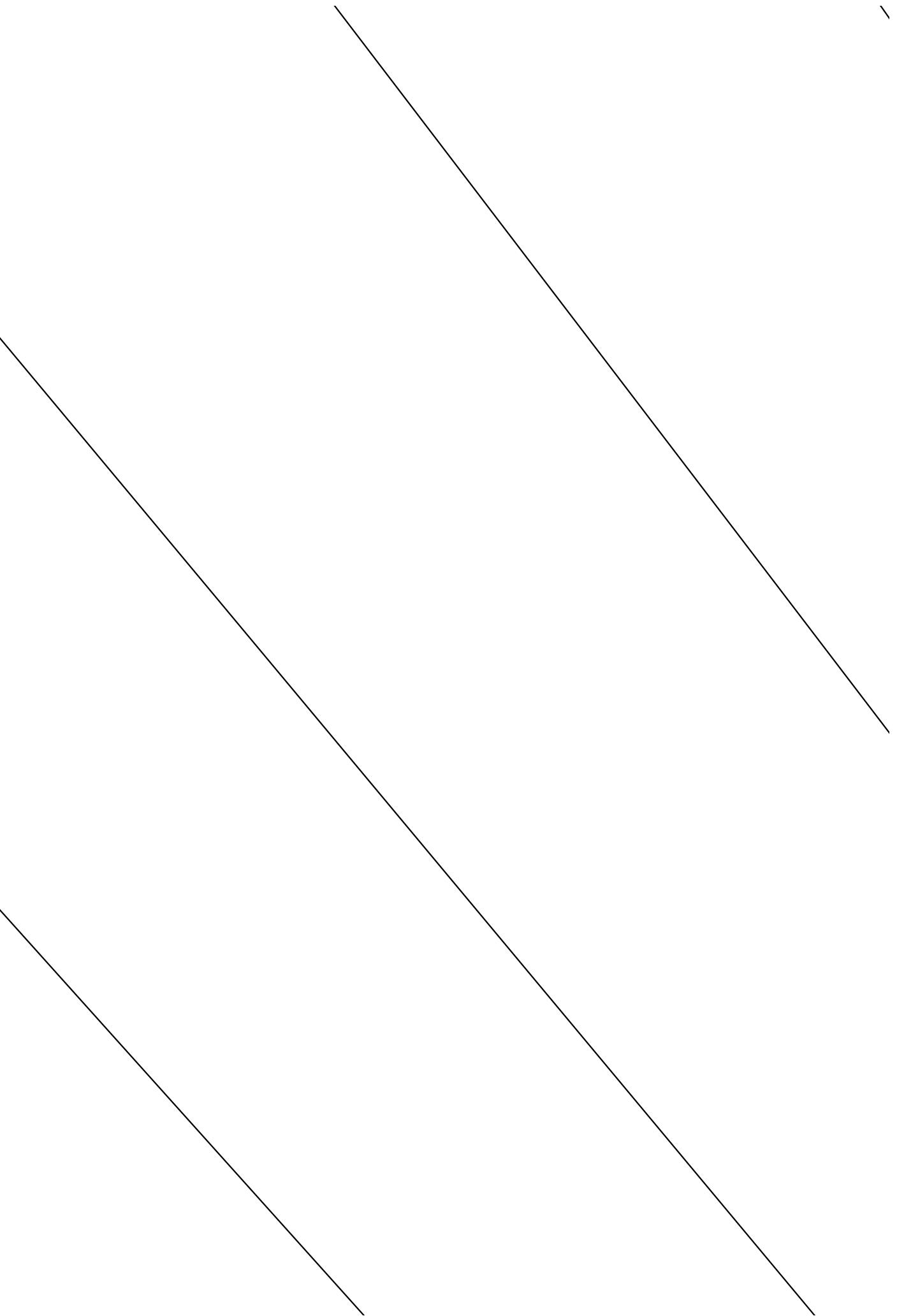


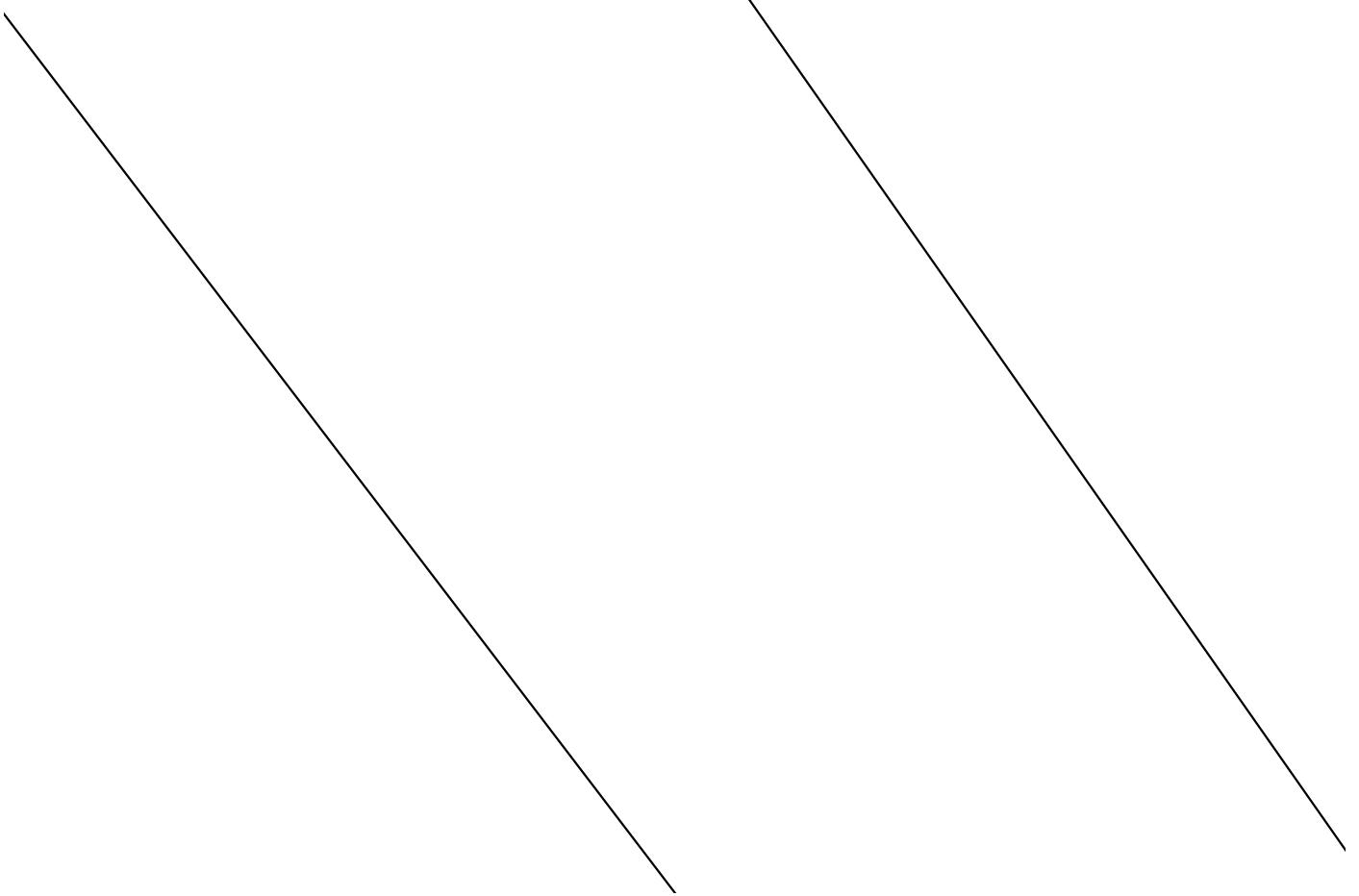
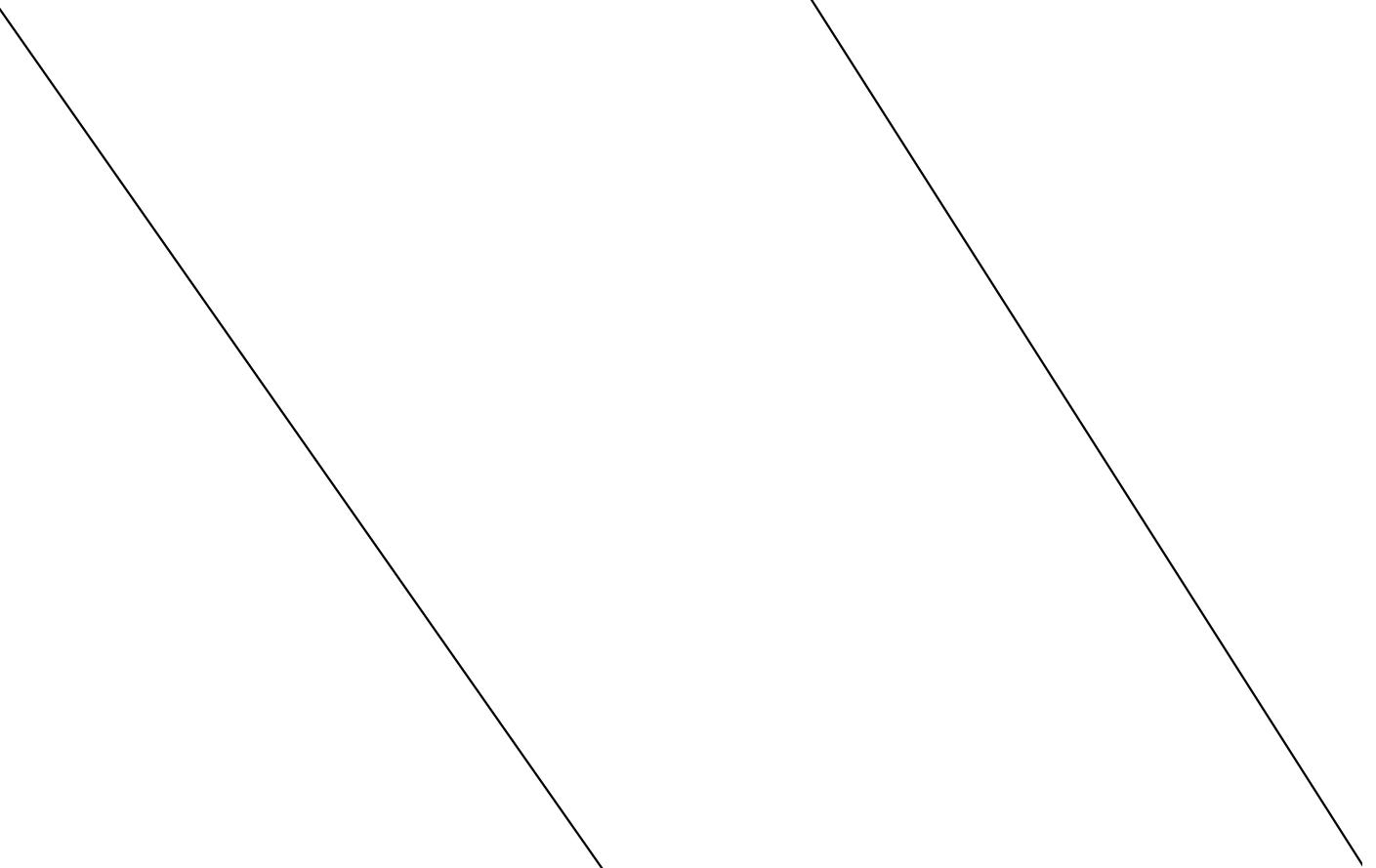
AbstractClassMutater imp

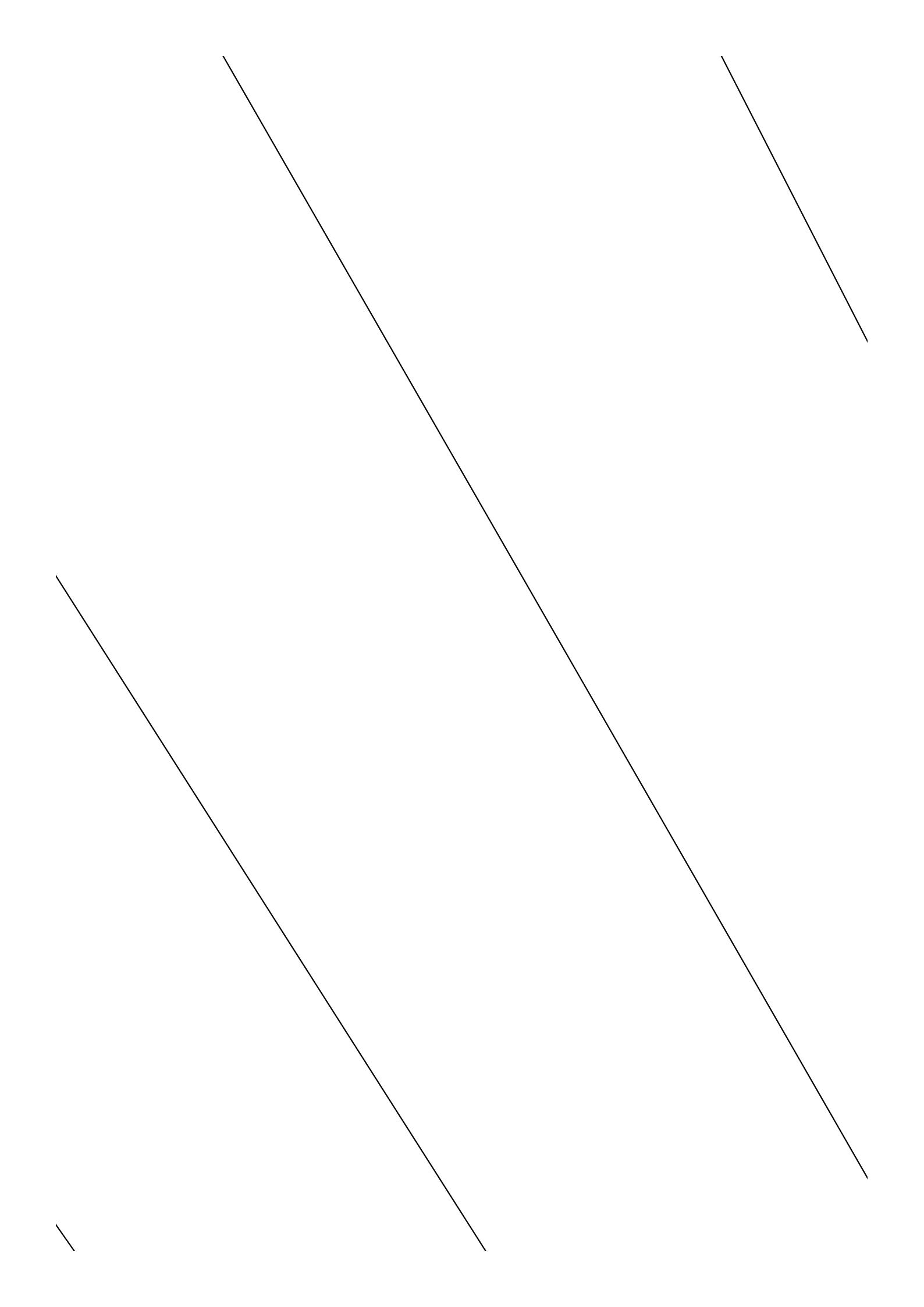


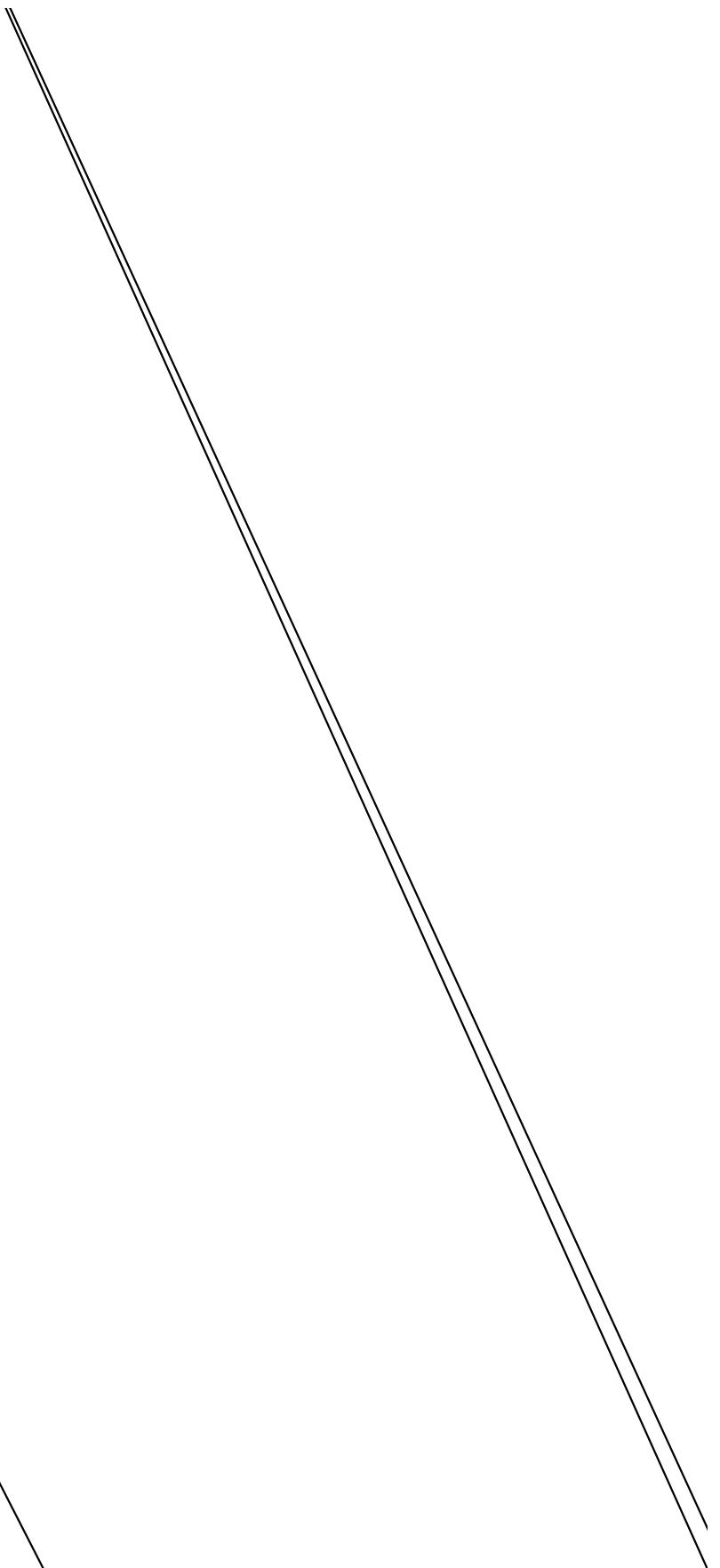


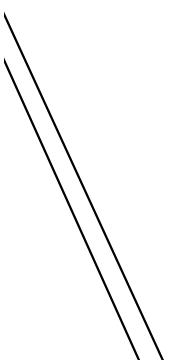
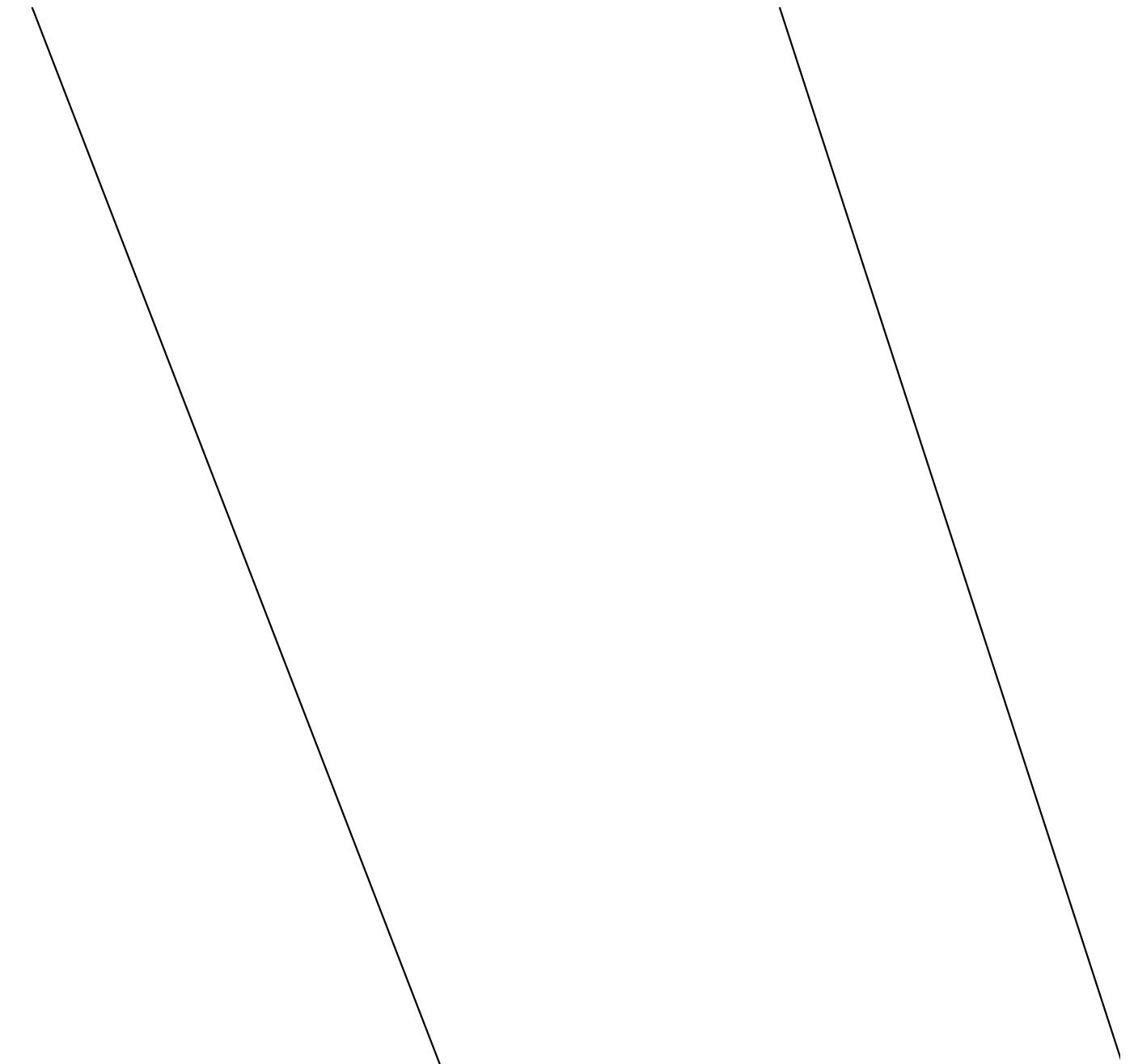


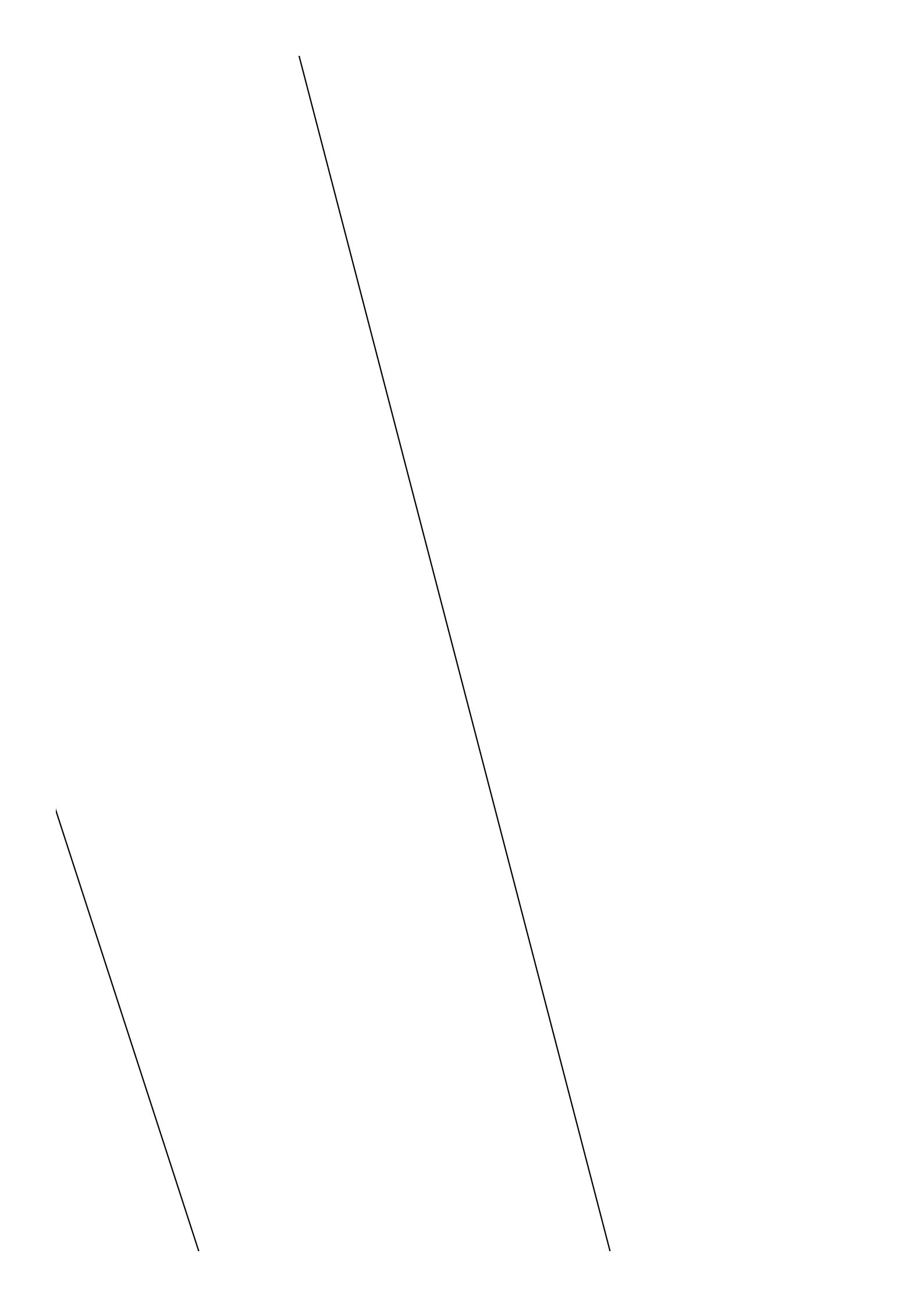




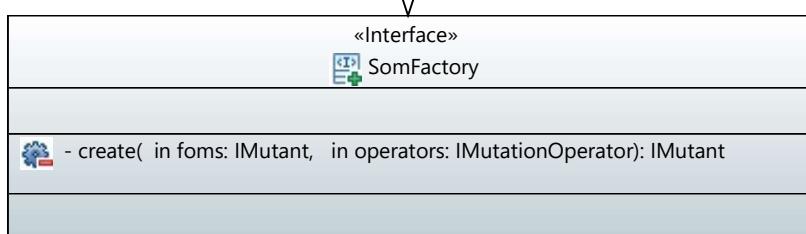








AbstractSomStrategy implements SomFactory



```
+ run()
+ run( in null: <Undefined>)
+ run(): IClassMutationResult
+ run( in null: <Undefined>): IClassMutationResult
+ run( in param: <Undefined>): IClassMutationResult
+ run( in param: Object): IClassMutationResult
+ canRetry()
+ canRetry( in null: <Undefined>)
```

```
MutationWork
run
collectSummaryData
computeInitialTestsDuration
init
initReset
mutate
getBytecode
generateFoms
mutate
getEvaluator
getStatistic
setStatistic
getKind
setKind
getTargetClass
getOperators
setOperators
getCache
setCache
getResultFormatter
 setResultFormatter
getSerialVersionUID
getClasspath
getEnvFactory
getTesterFactory
getOperatorsFactory
getMaxInfiniteLoopGuardTimeout
getTester
setTester
setEvaluator
getLOGGER
getWorkspace
AbstractWork
getClientId
canRetry
getRetries
getSerialVersionUID
```



AbstractWork

- clientId: long [1]

«Volatile» - retries: int [1]

- serialVersionUID: long [1]

«Create» + AbstractWork(in clientId: long, in retries: int)

+ getClientId(): long

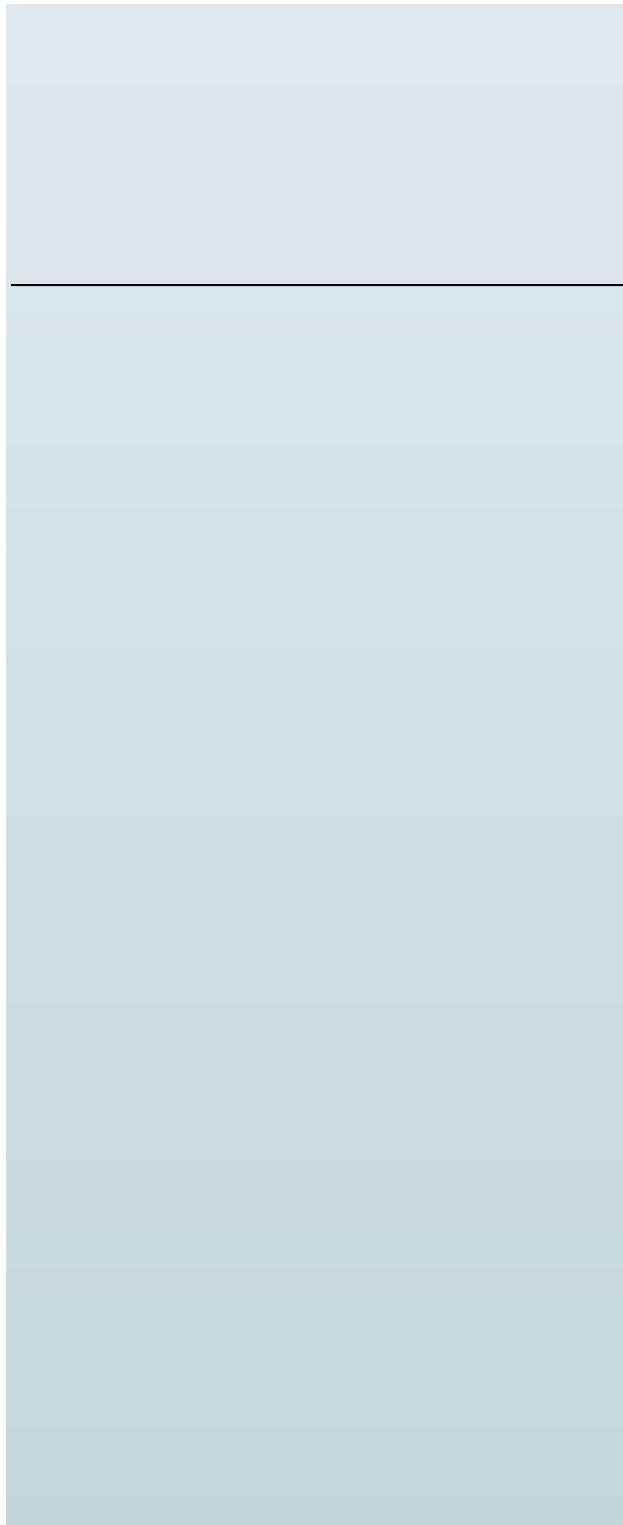
«Synchronized» + canRetry(): boolean

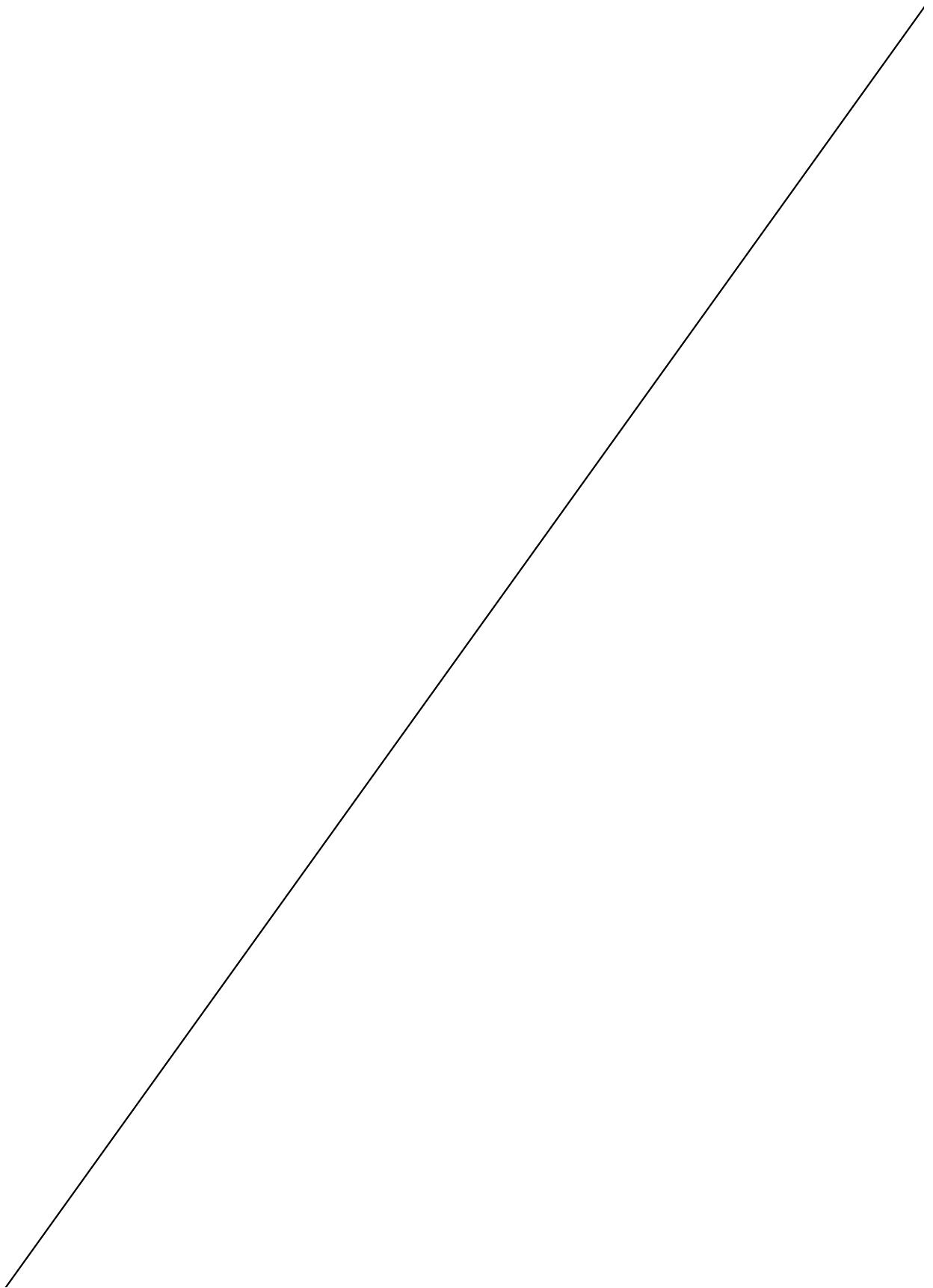
+ getRetries(): int

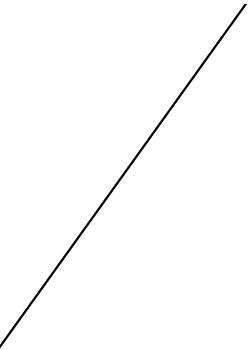
+ getSerialVersionUID(): long

+ getClientId()

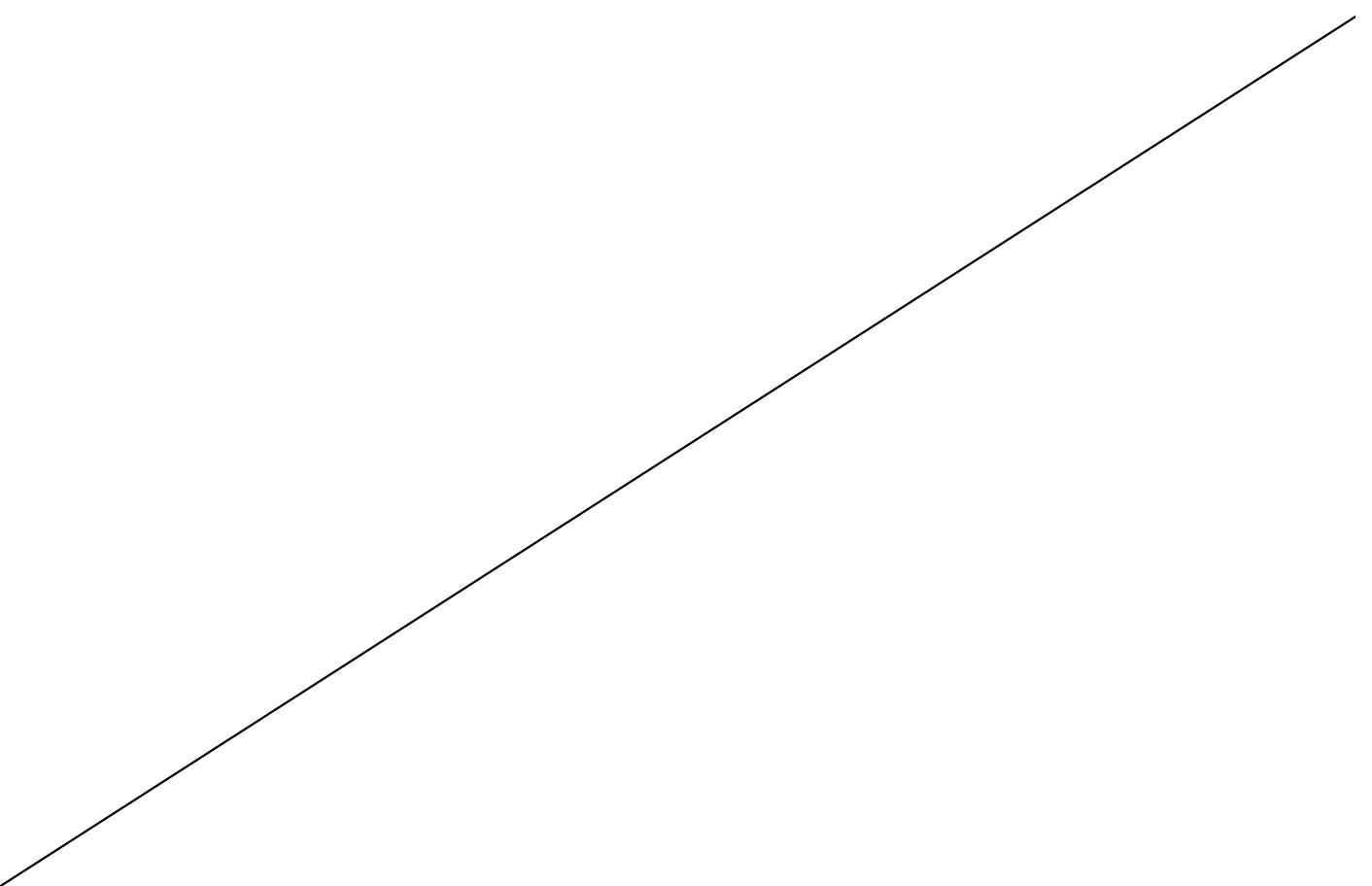
+ getClientId(in null: <Undefined>)

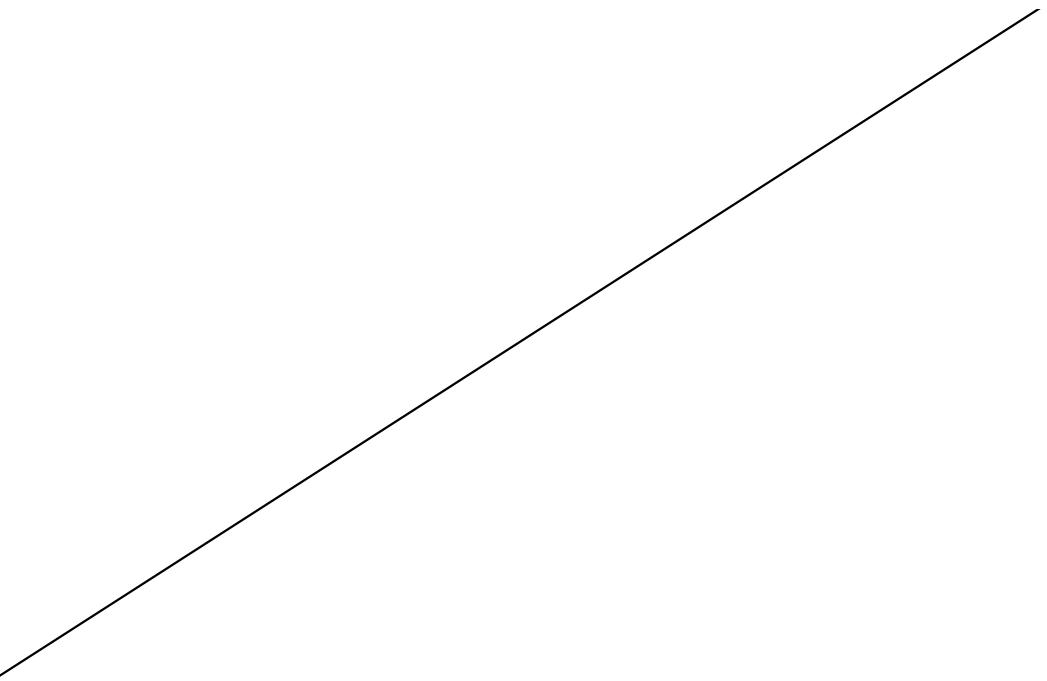


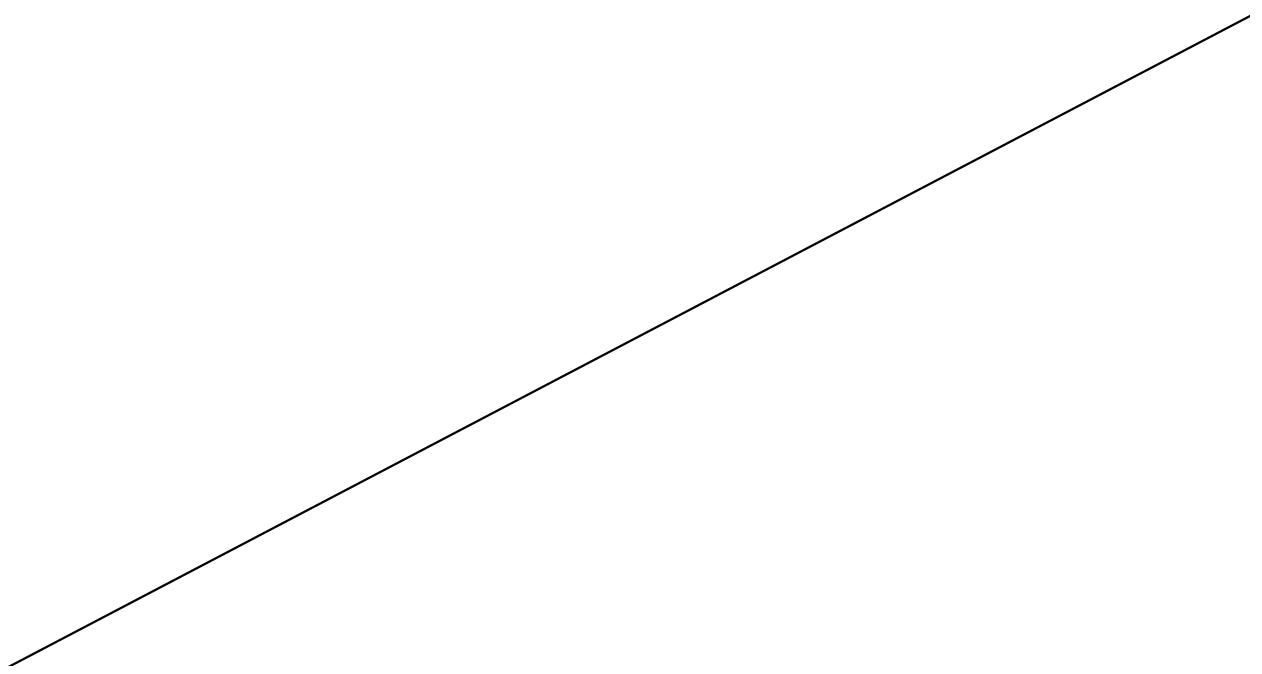


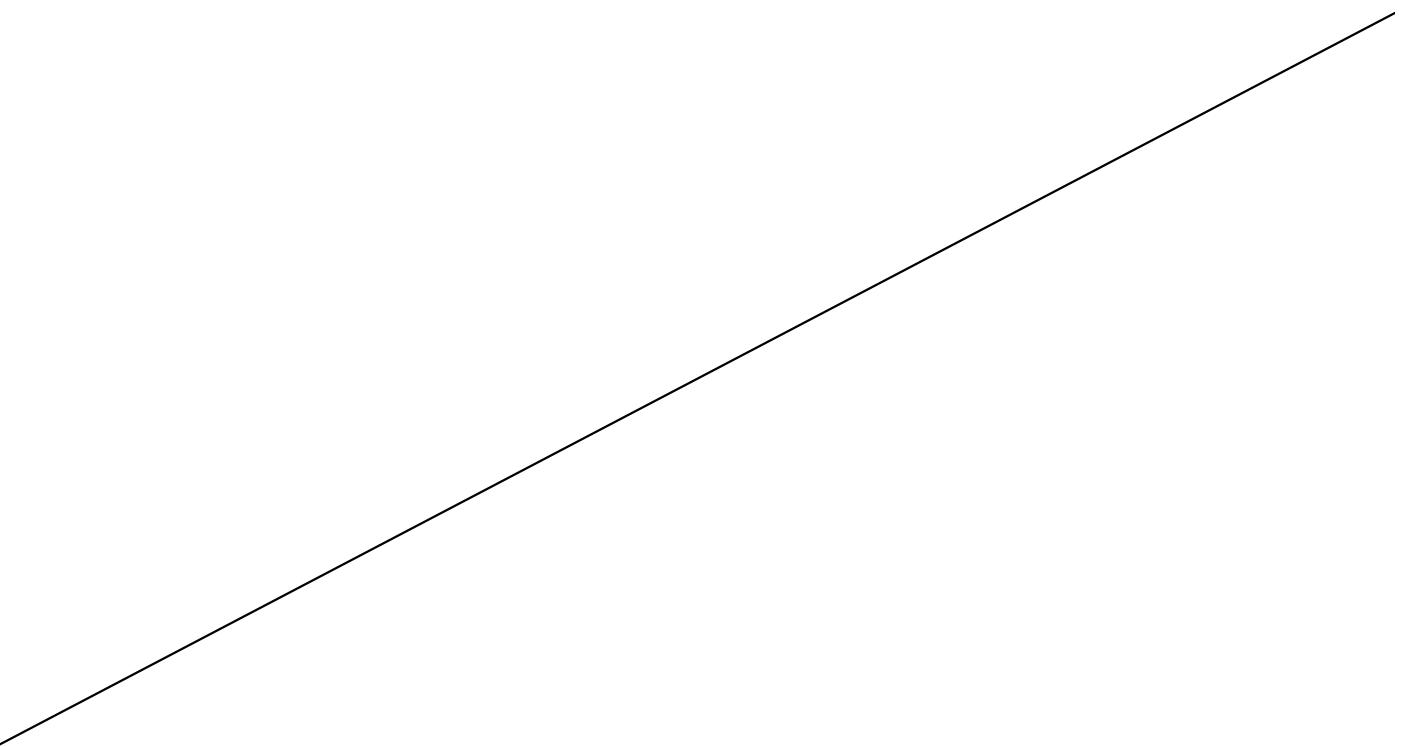


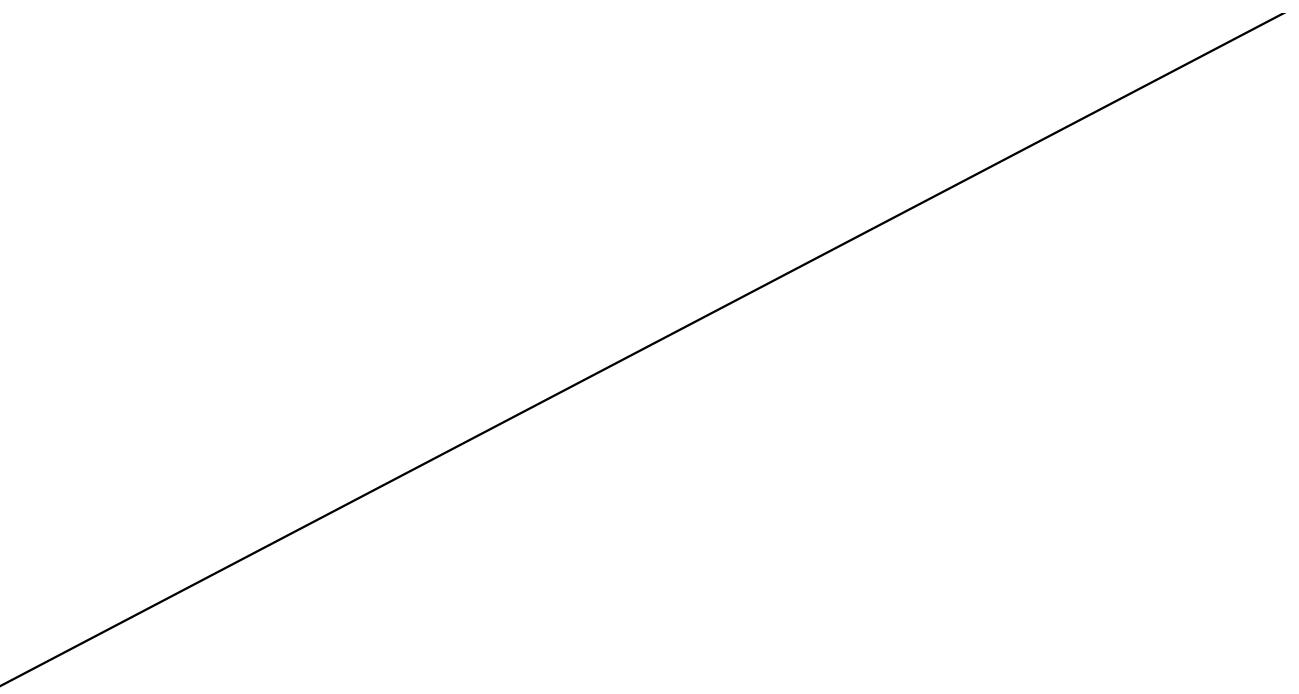




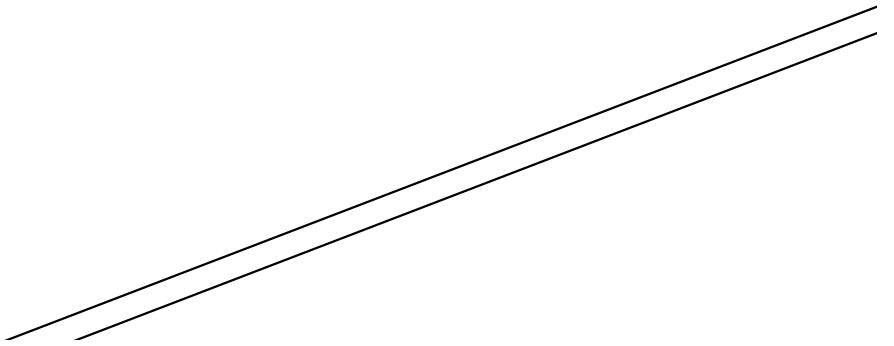


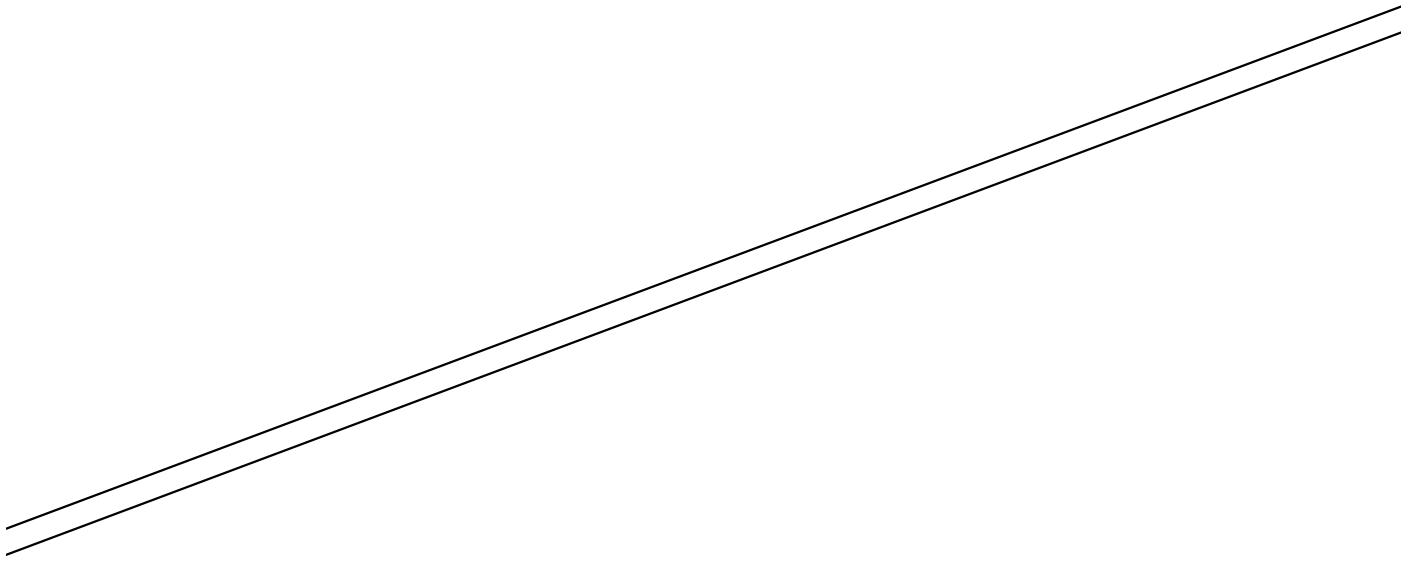


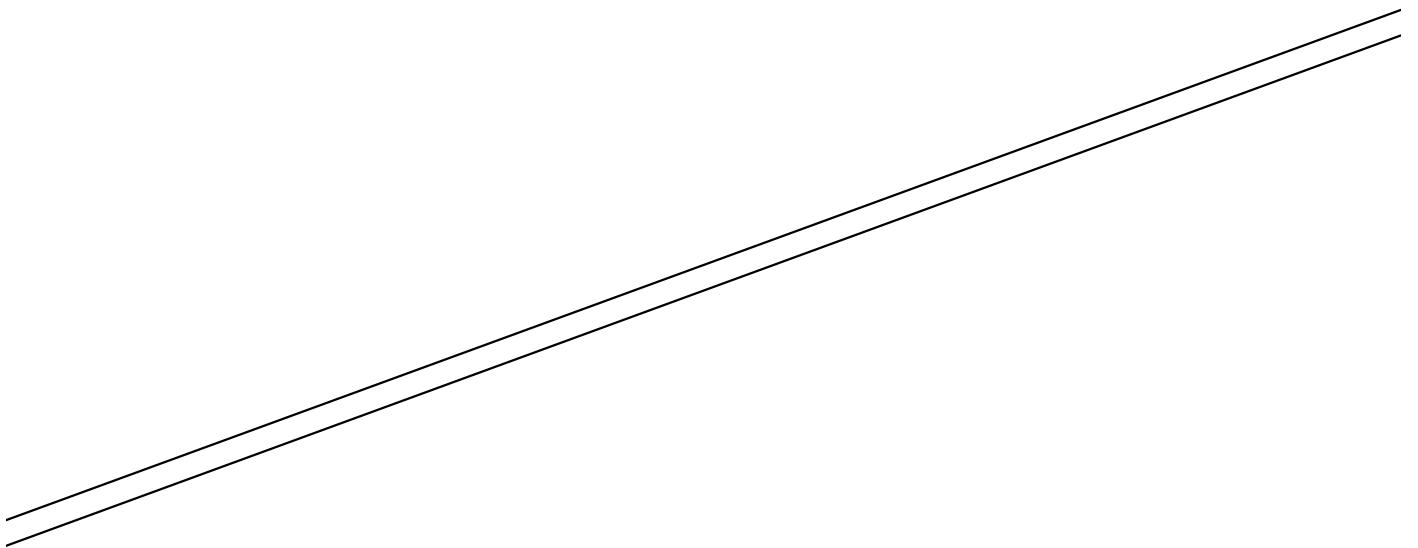


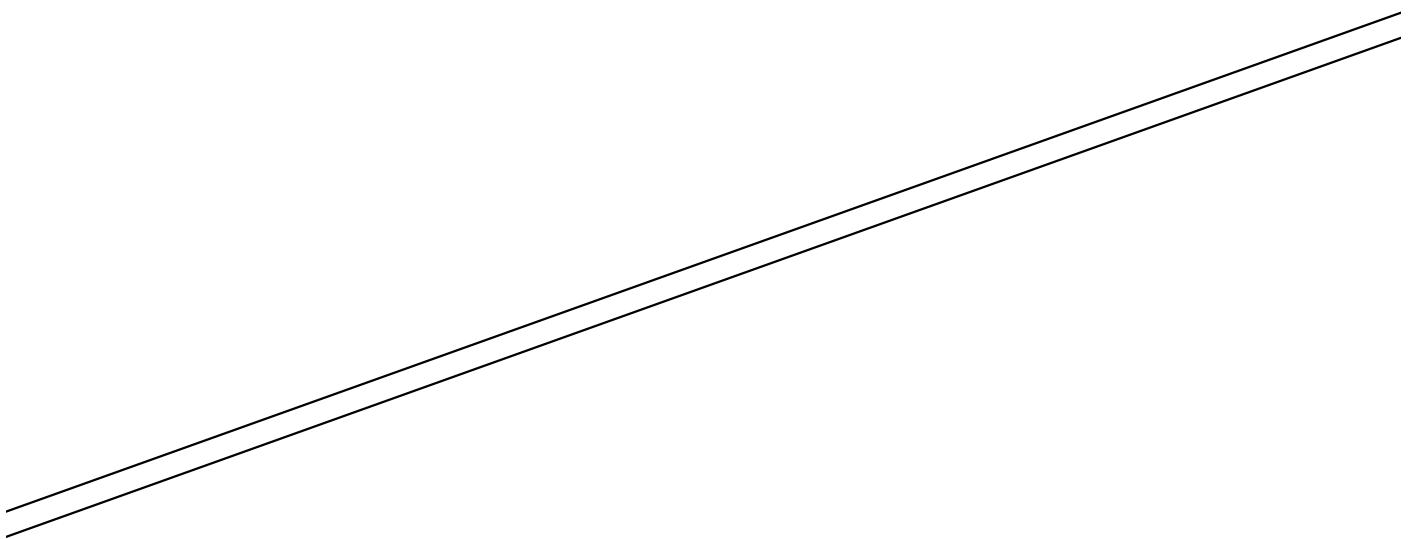


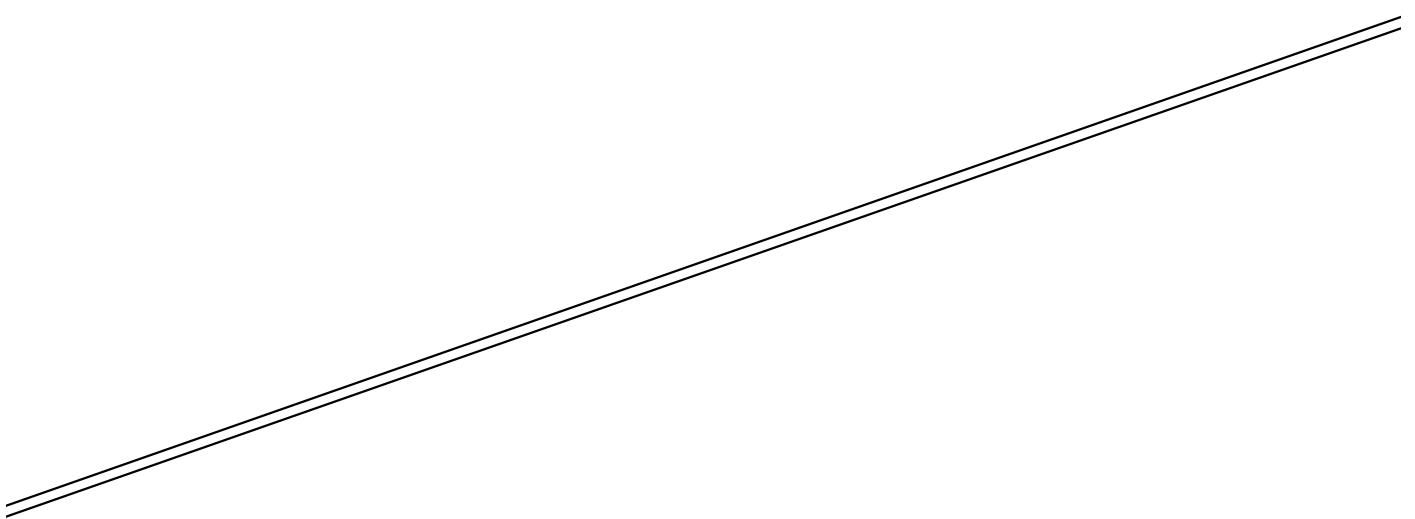
//

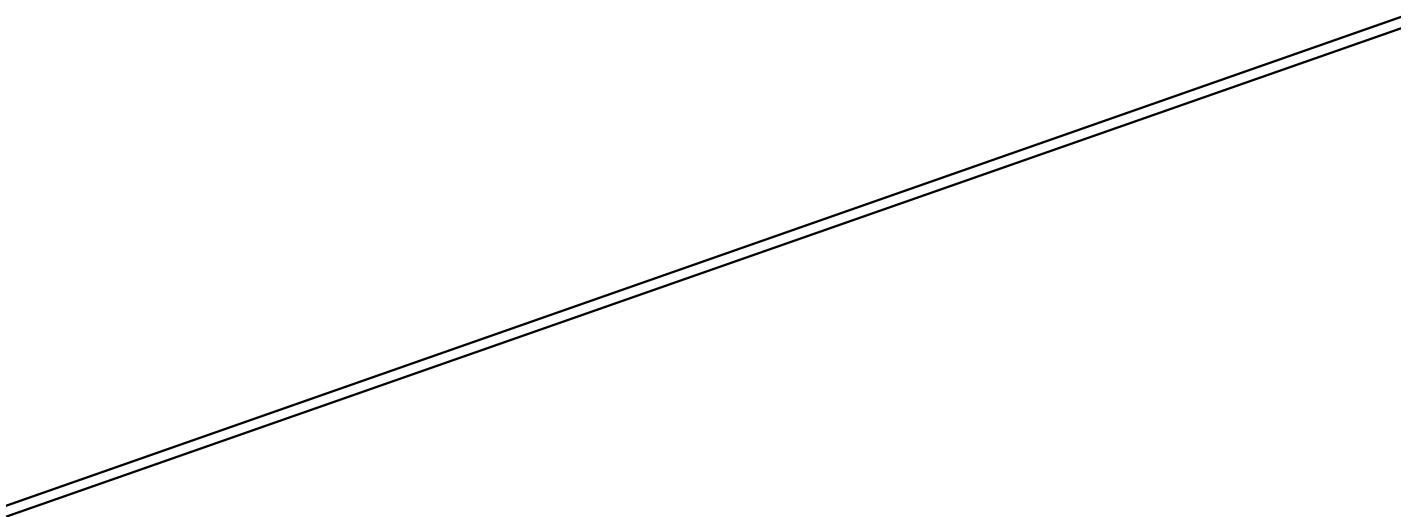


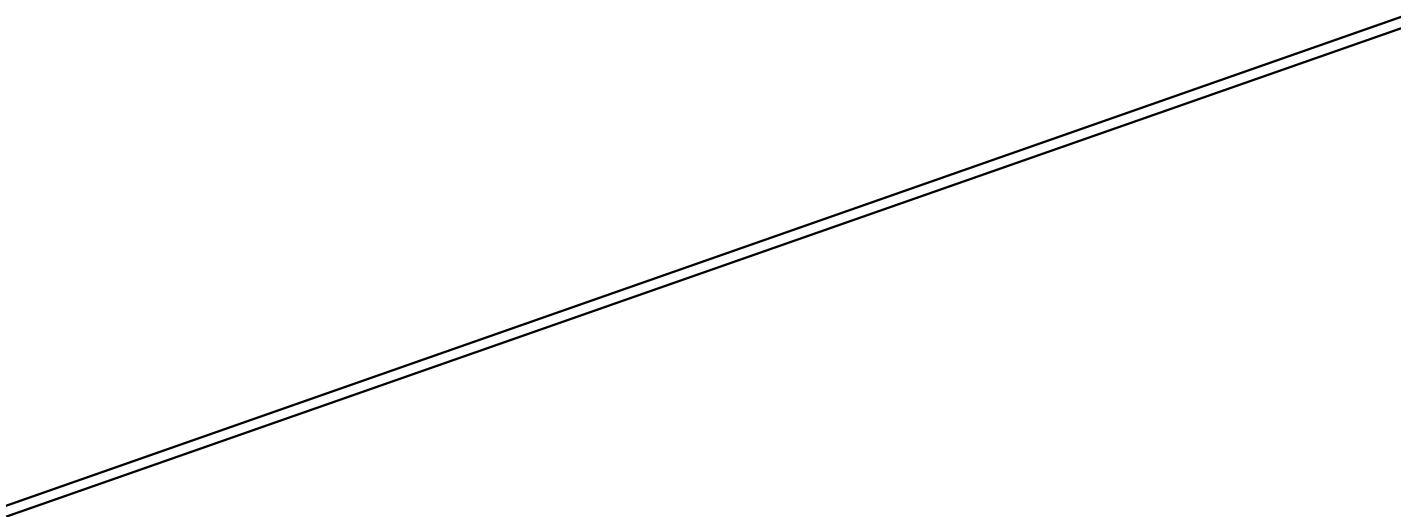


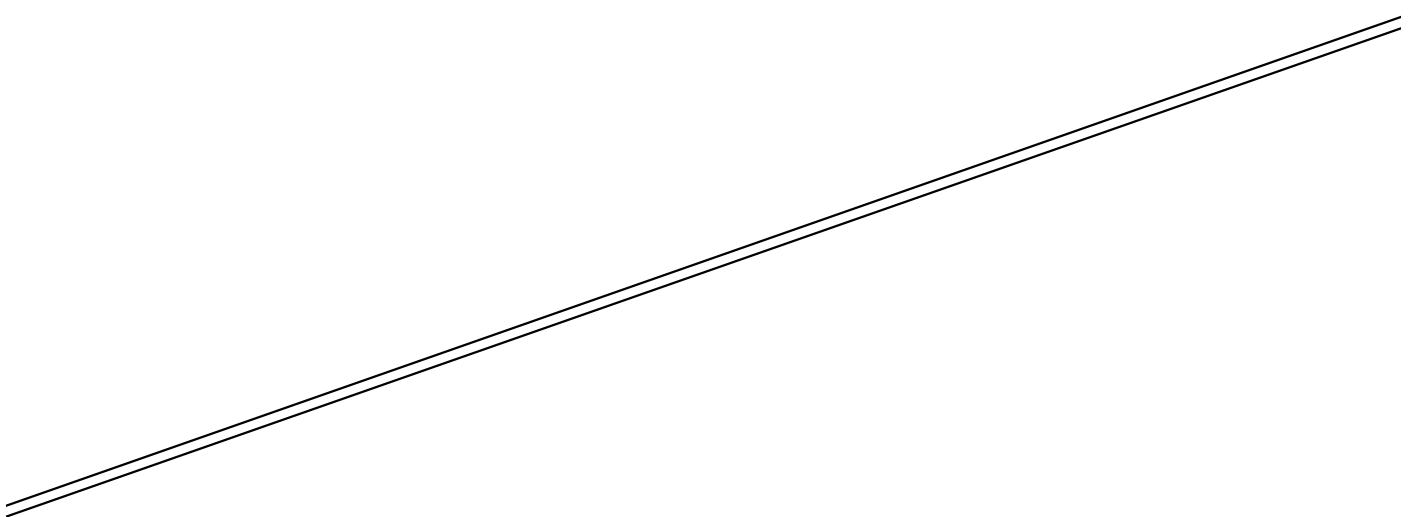


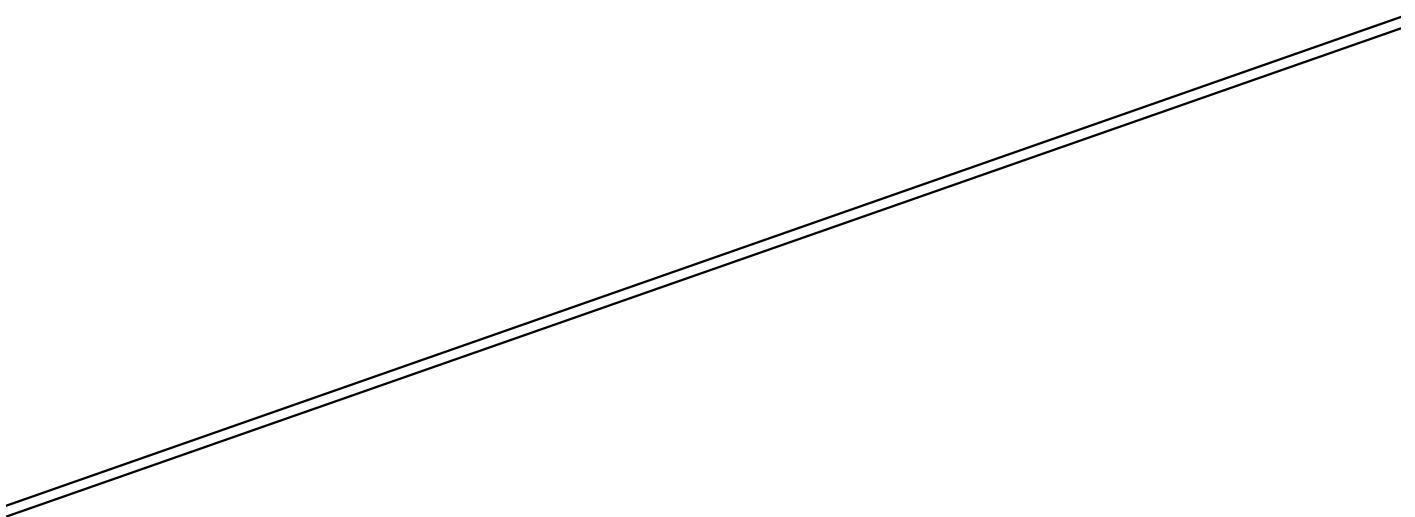


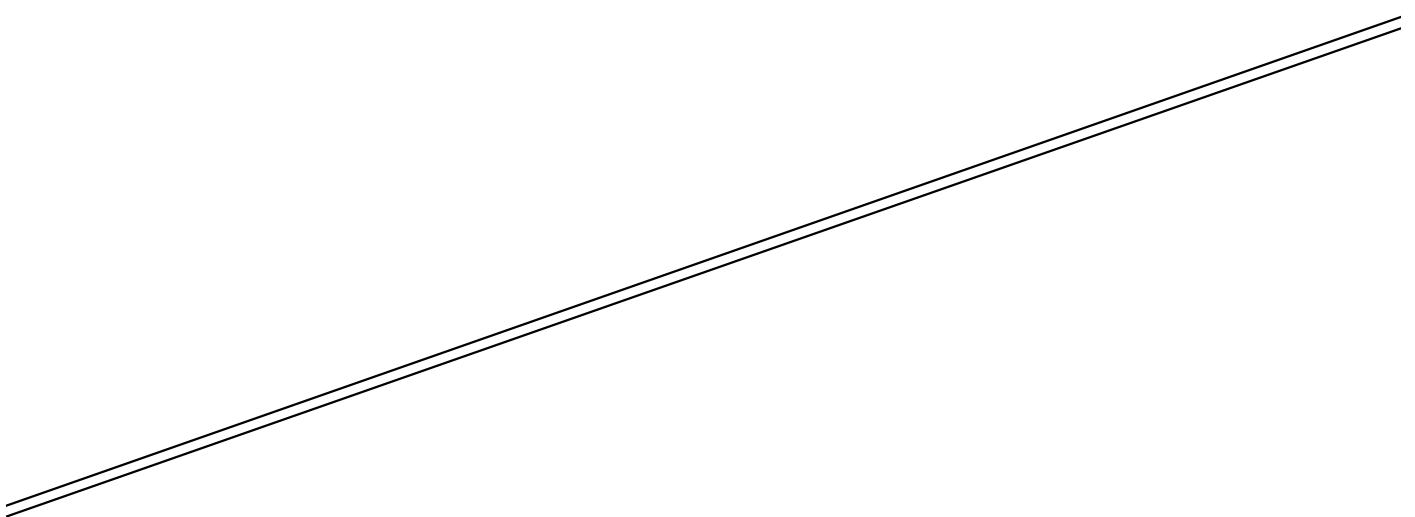


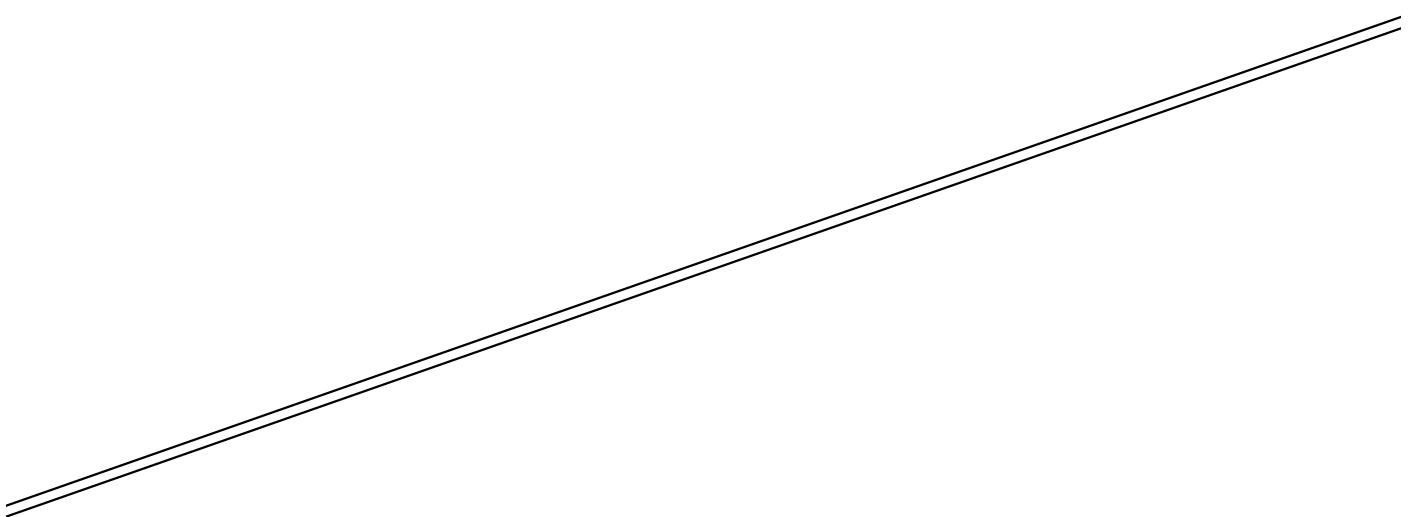


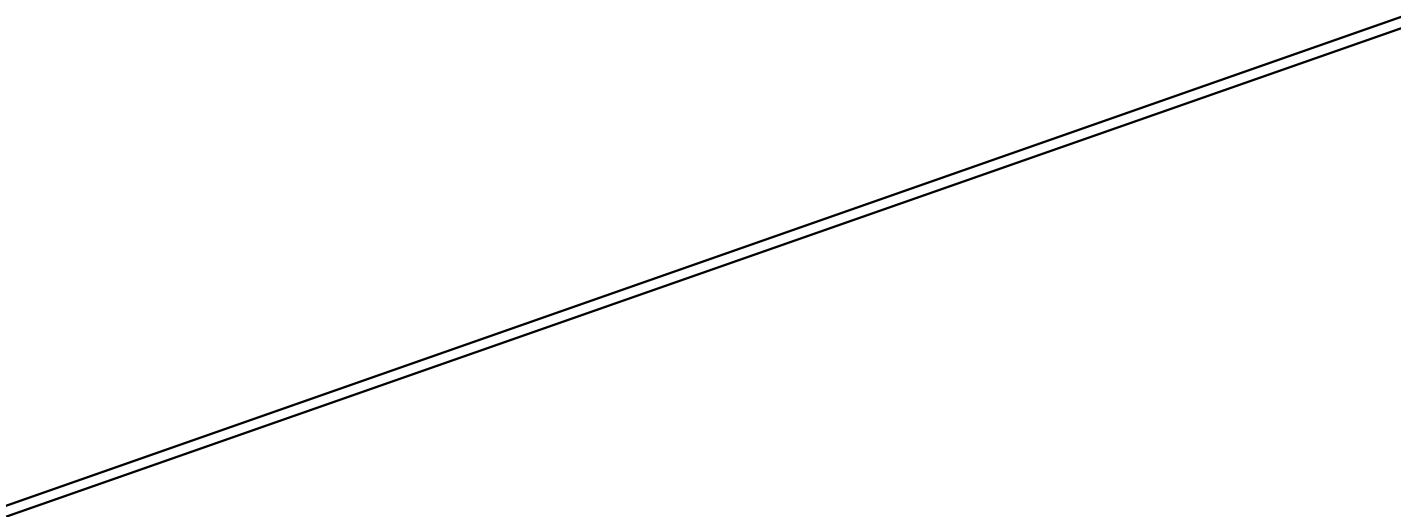


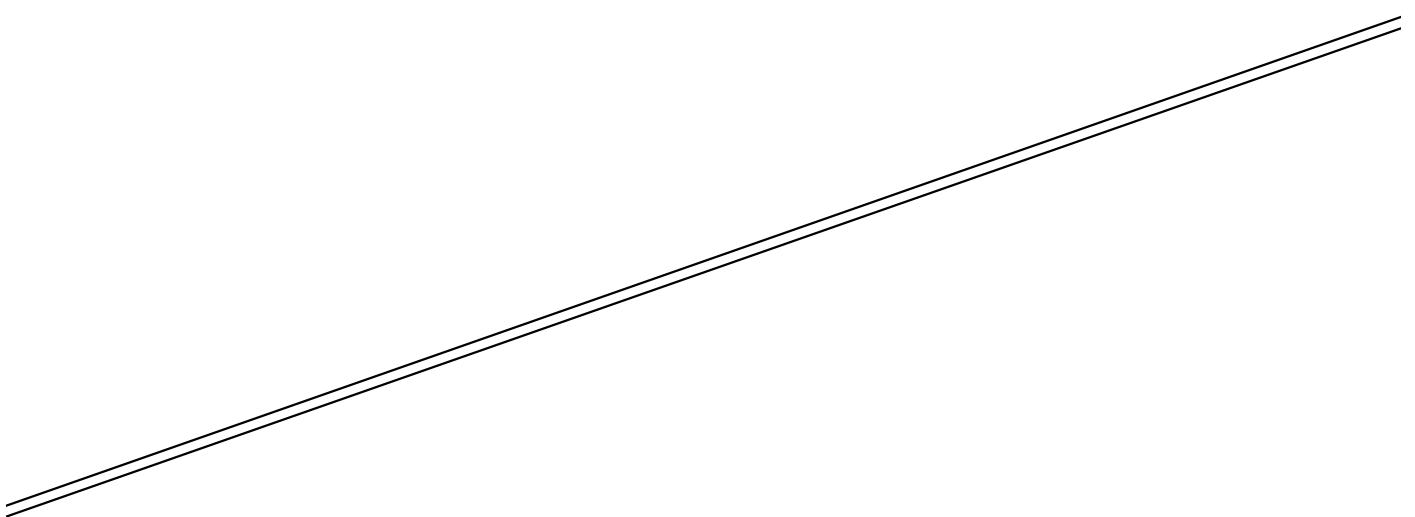


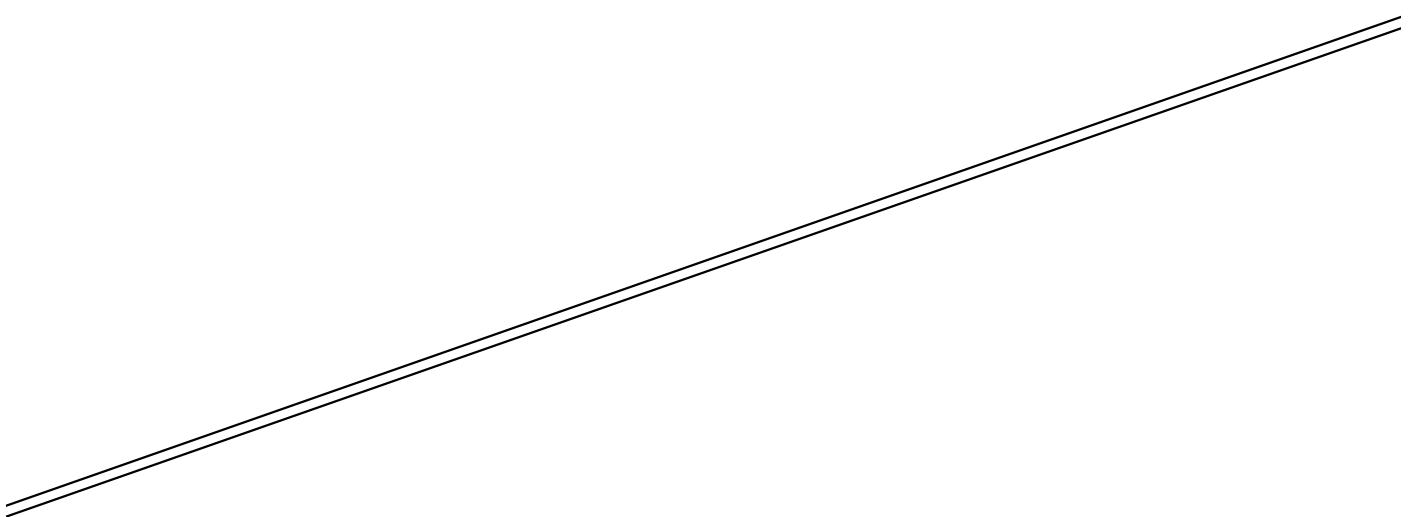


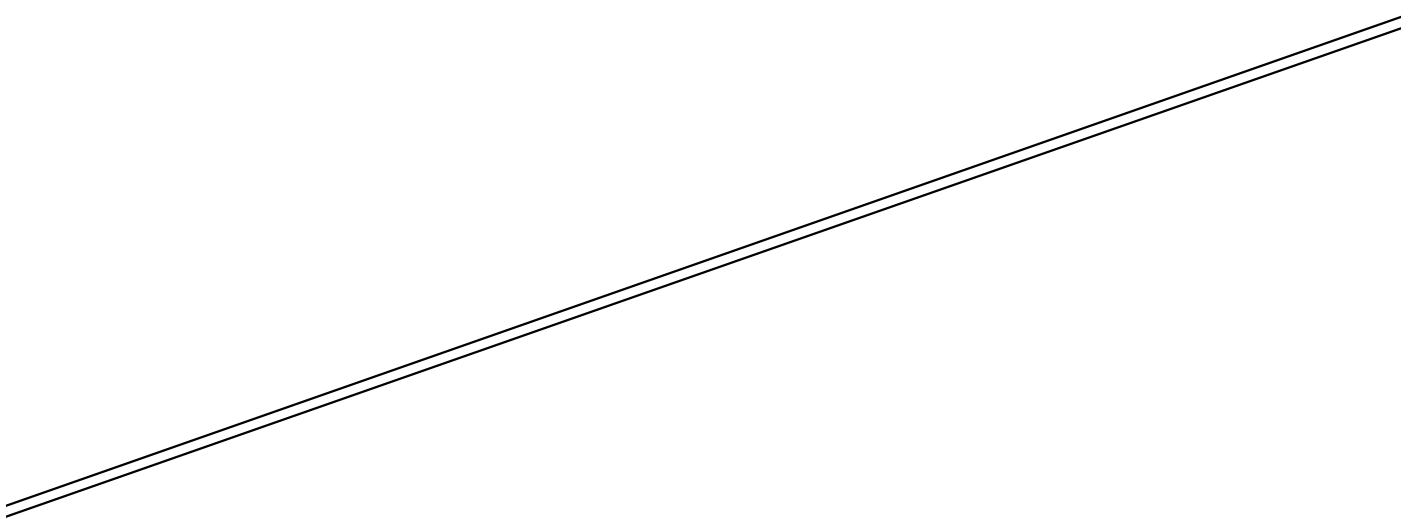


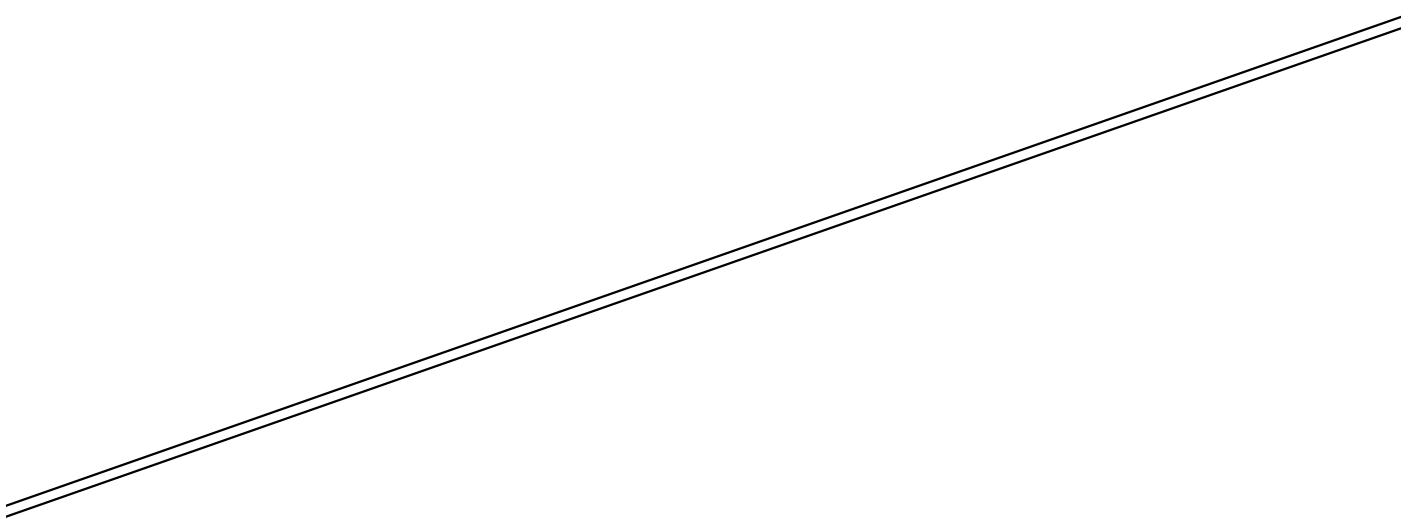


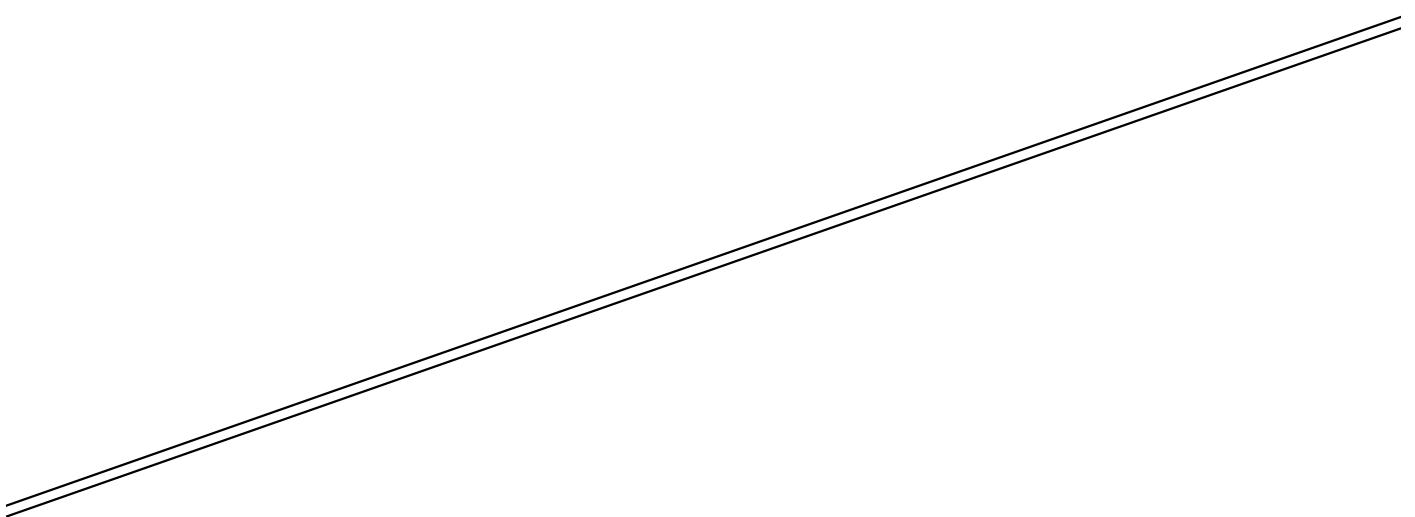


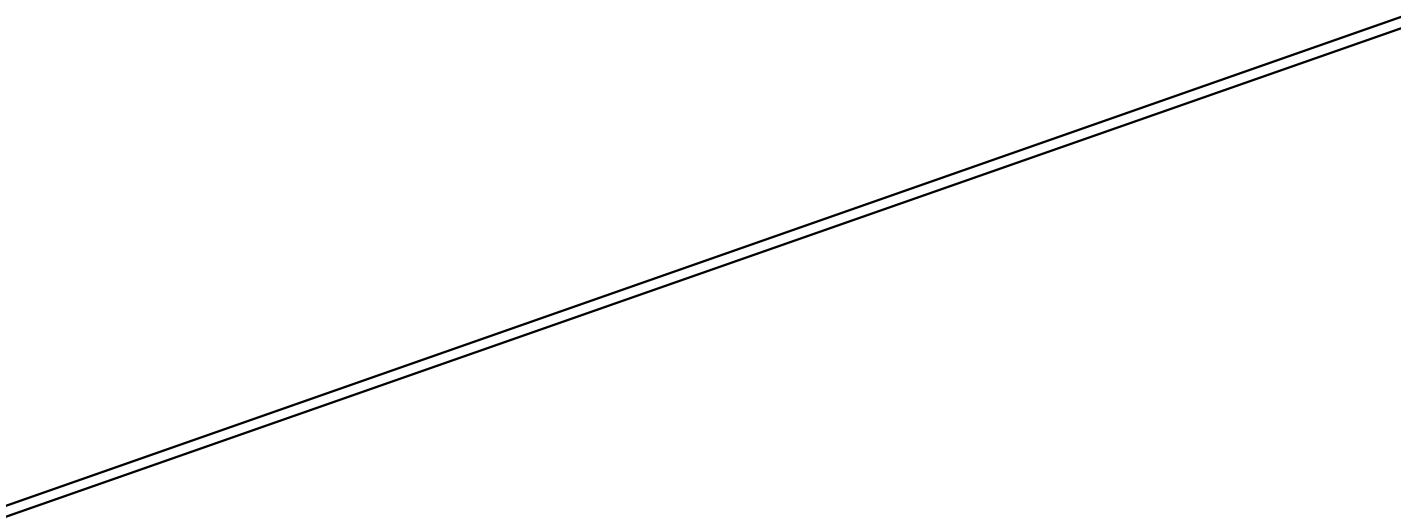


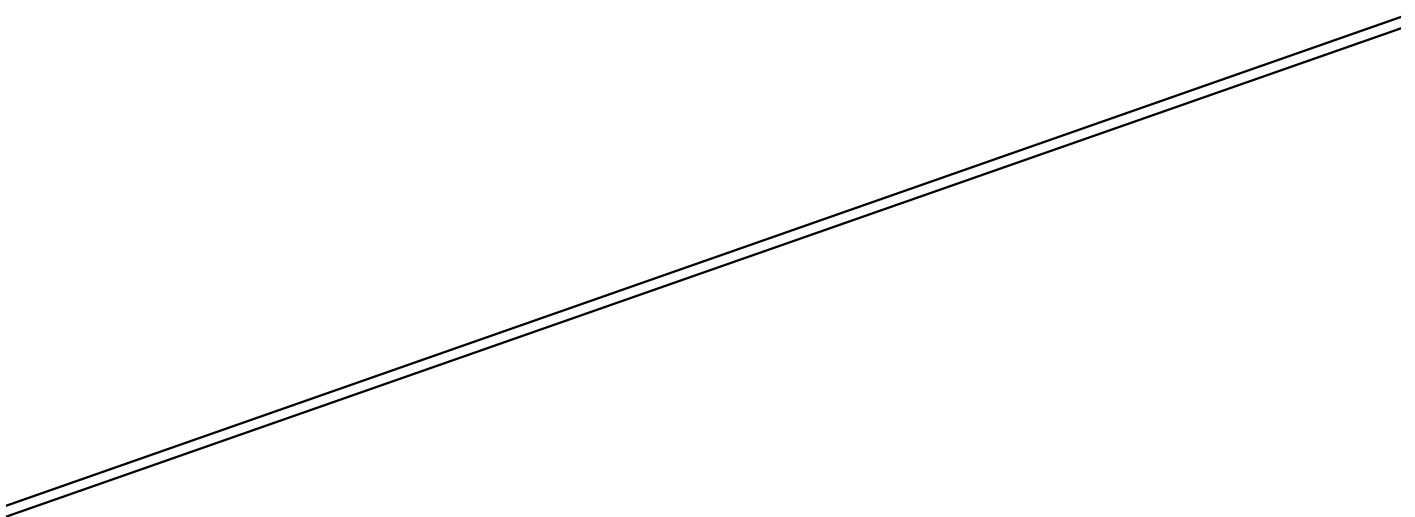


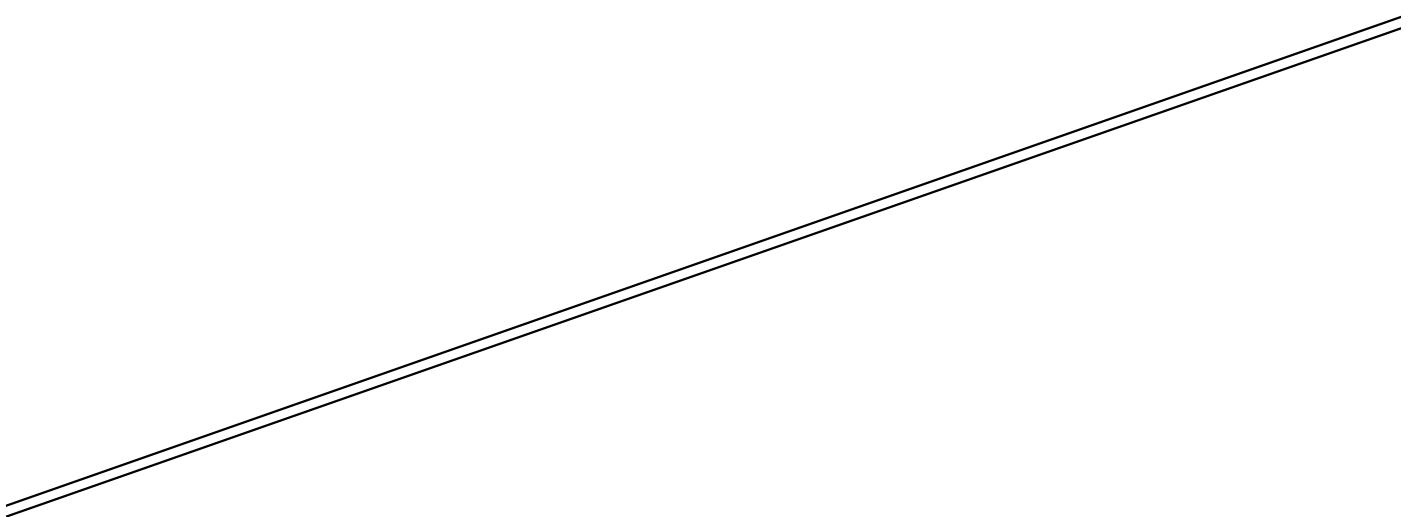


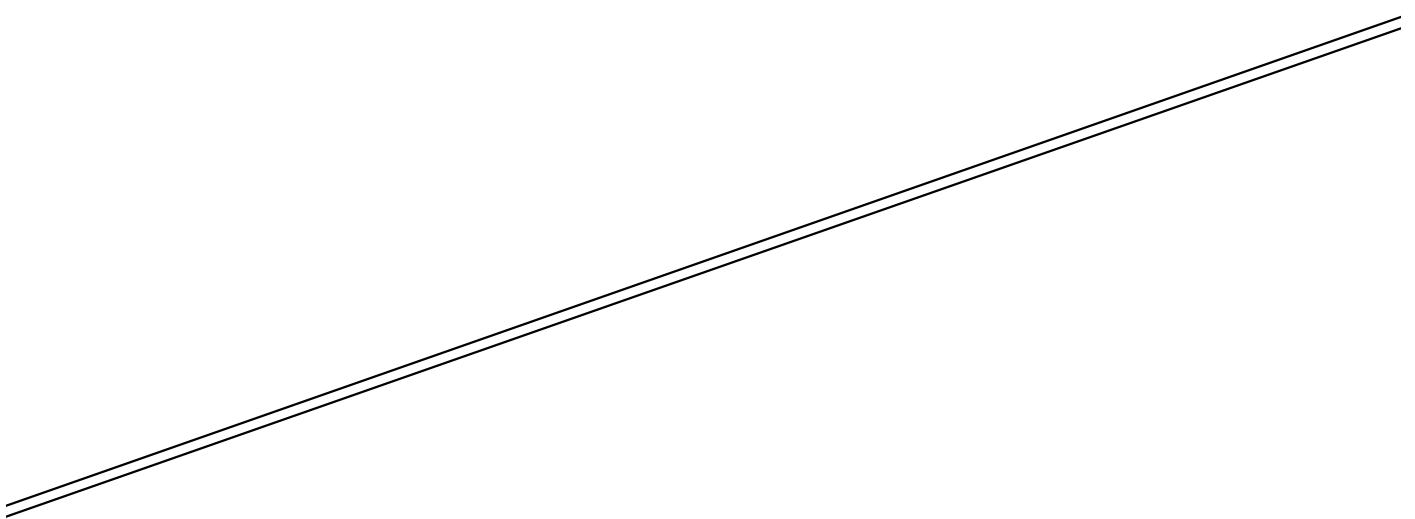


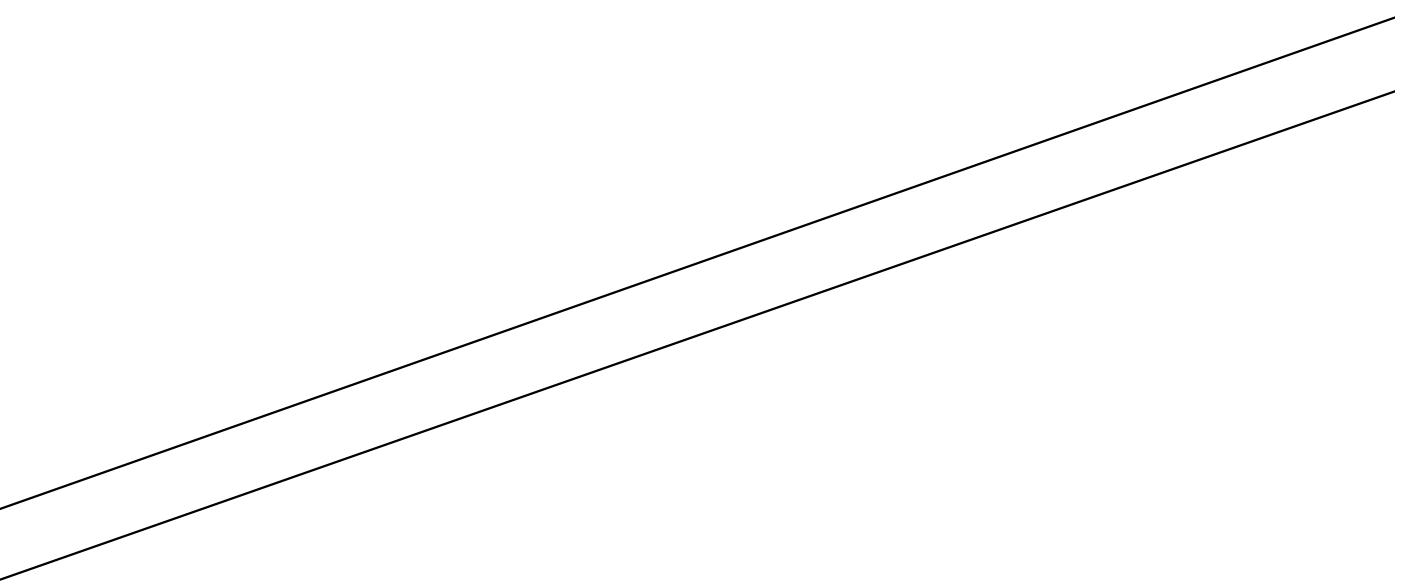


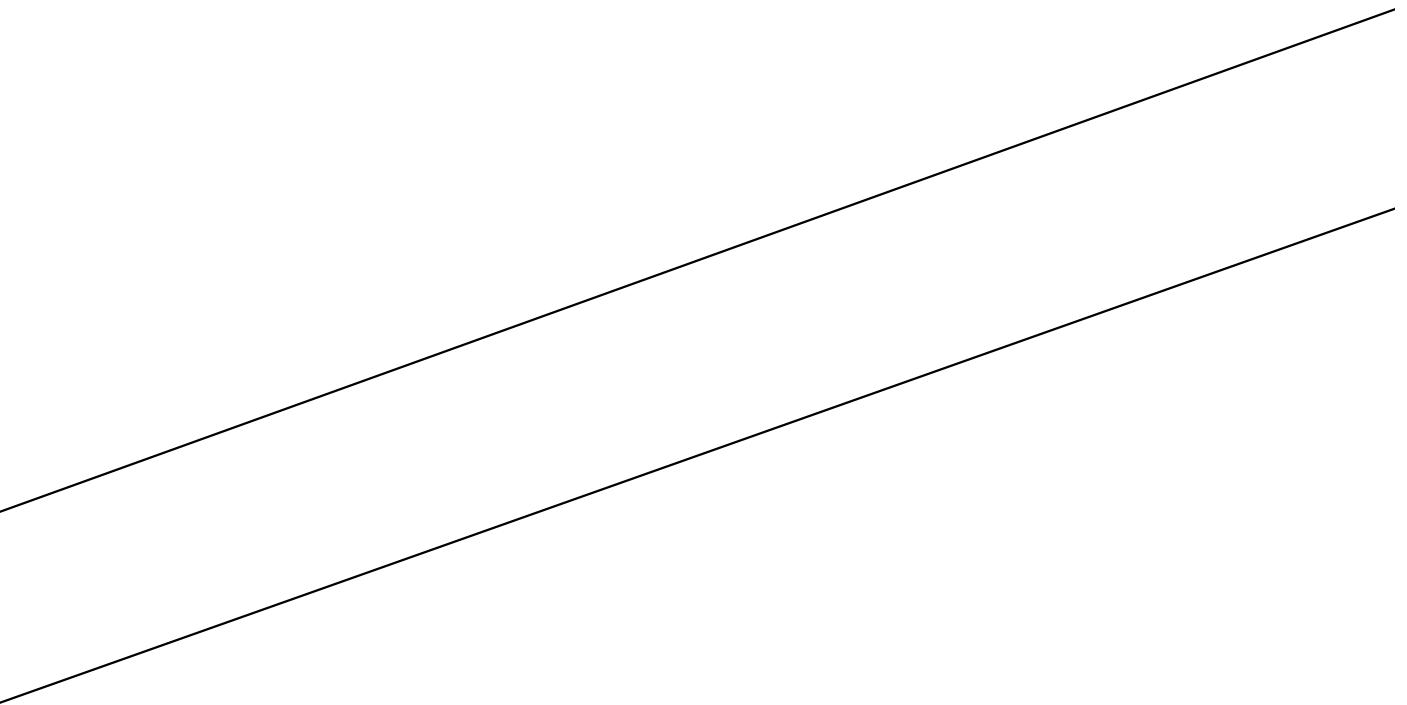


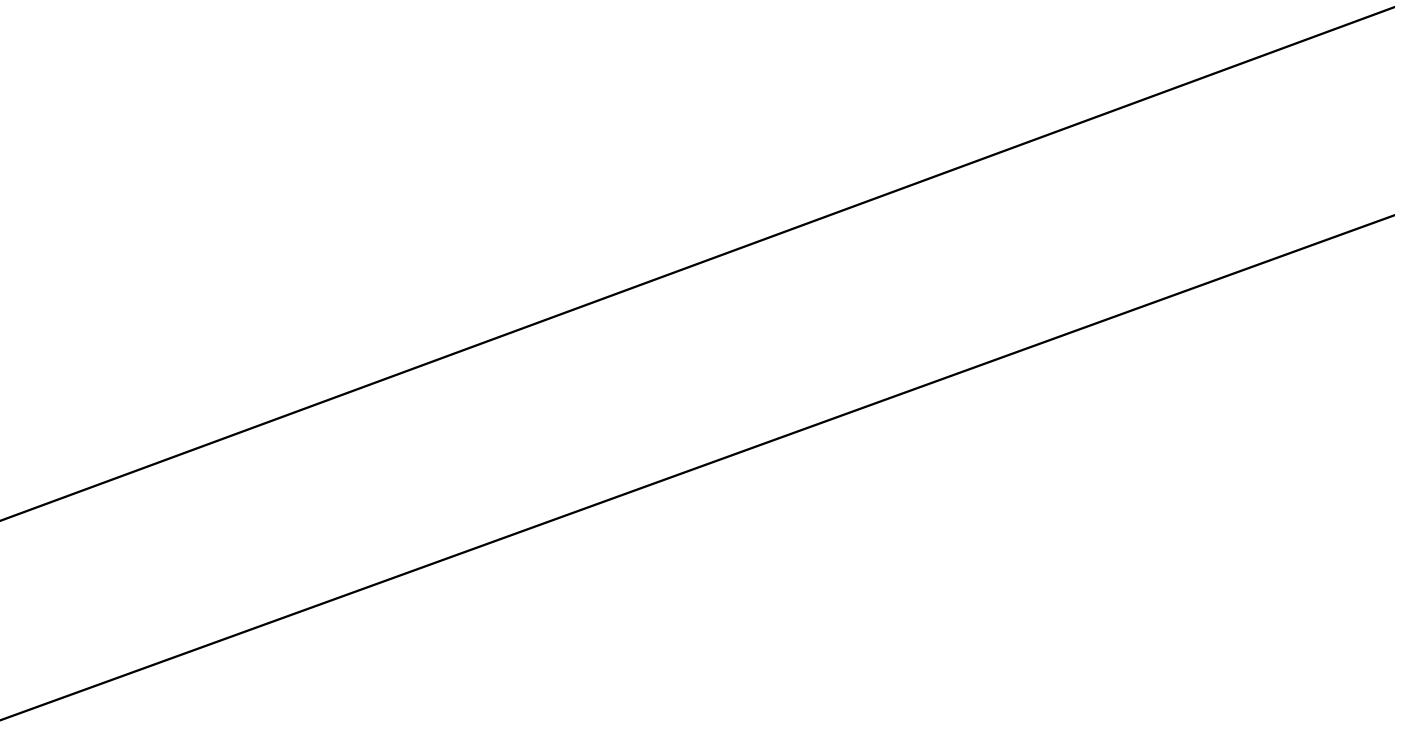


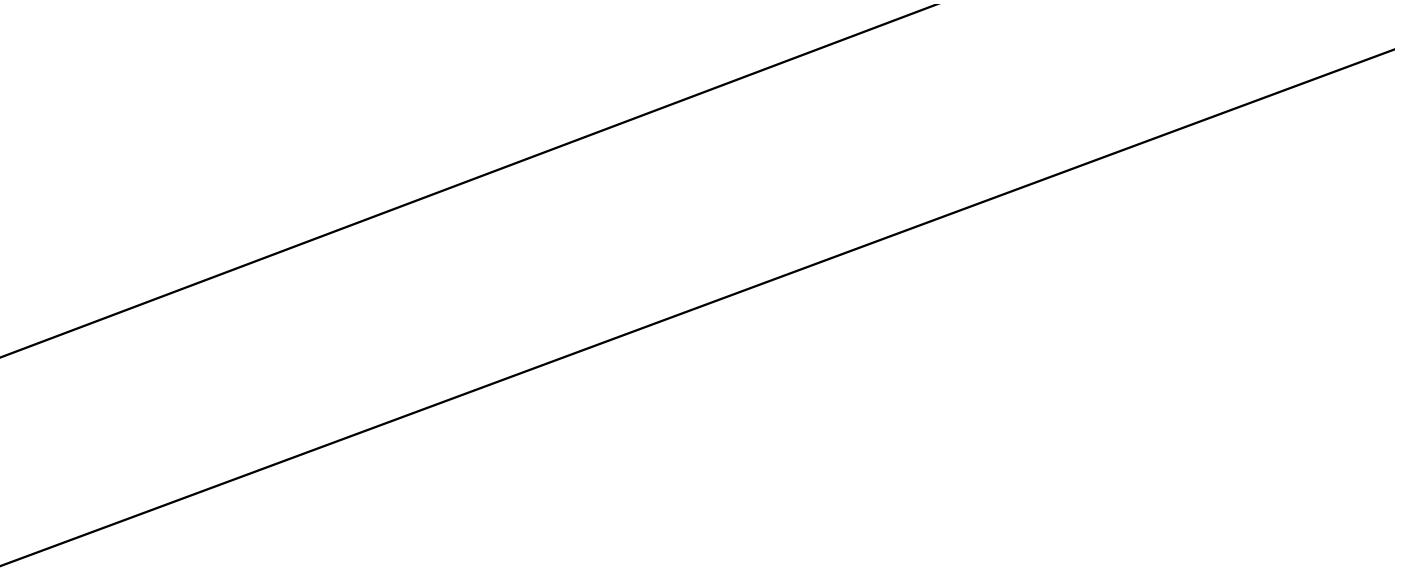


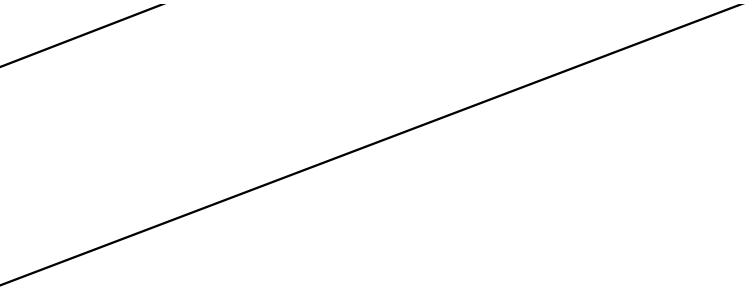


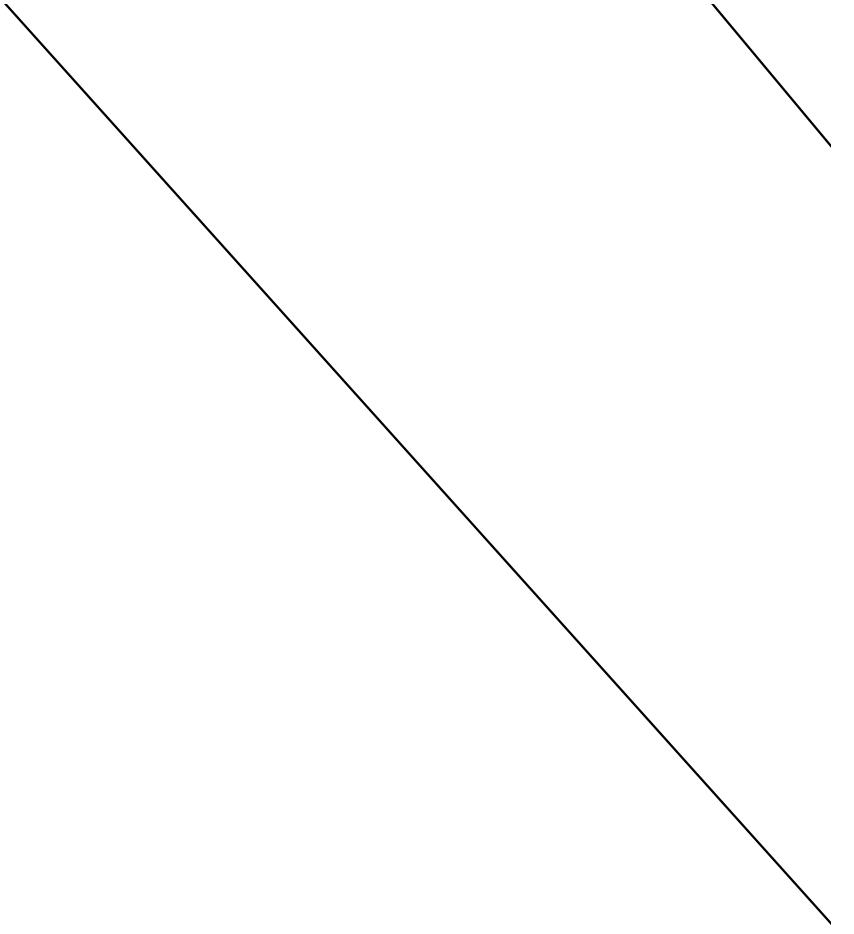


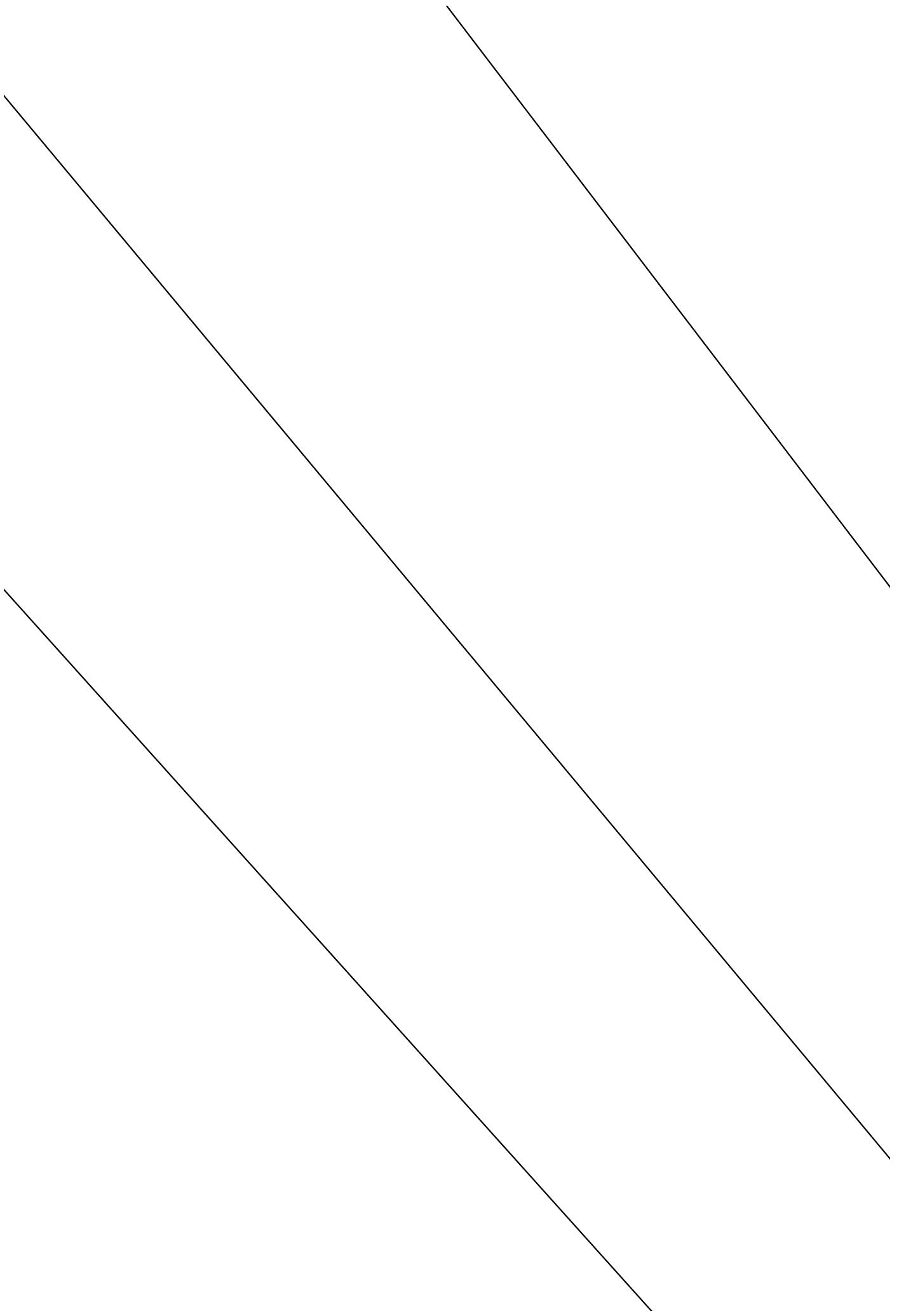


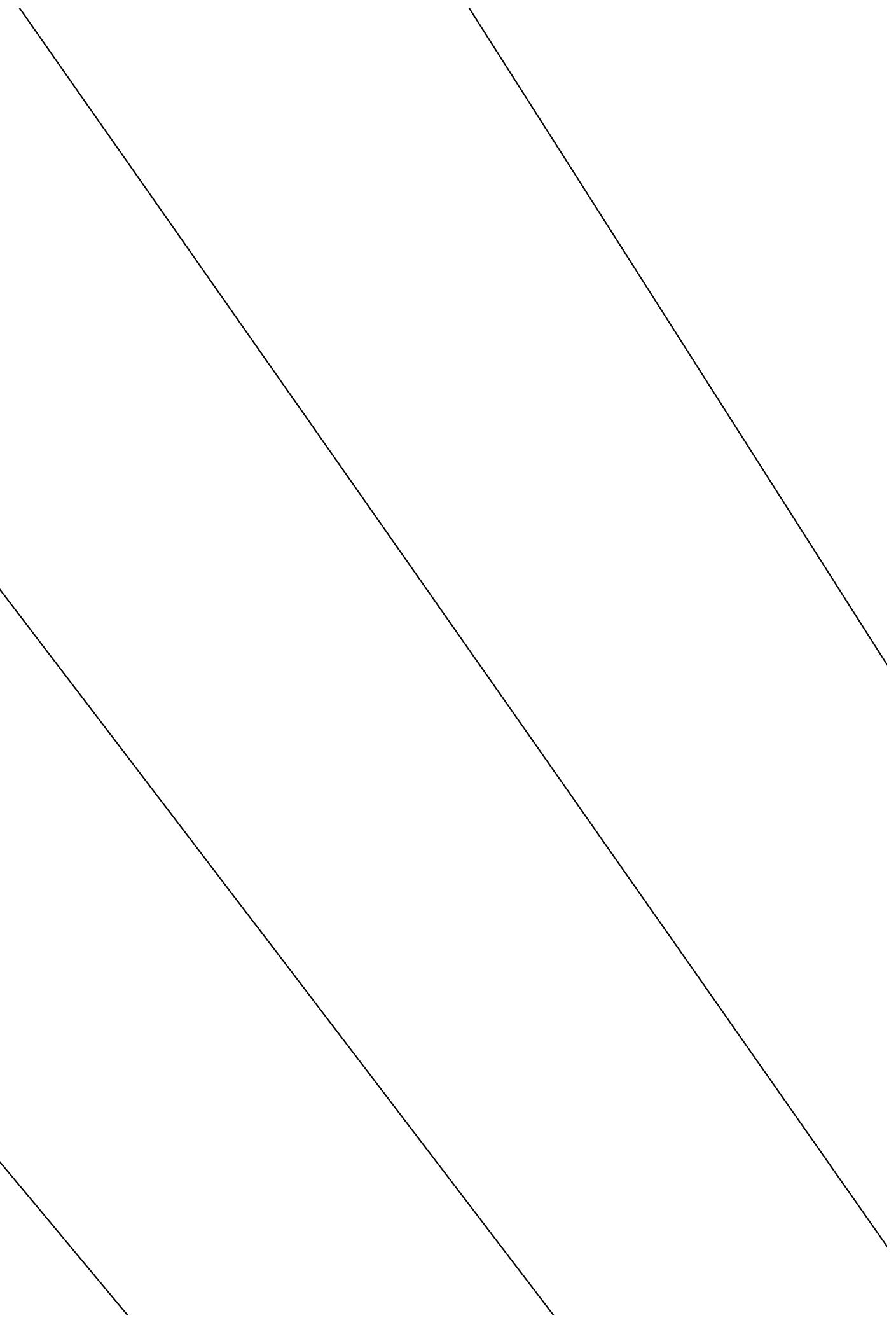


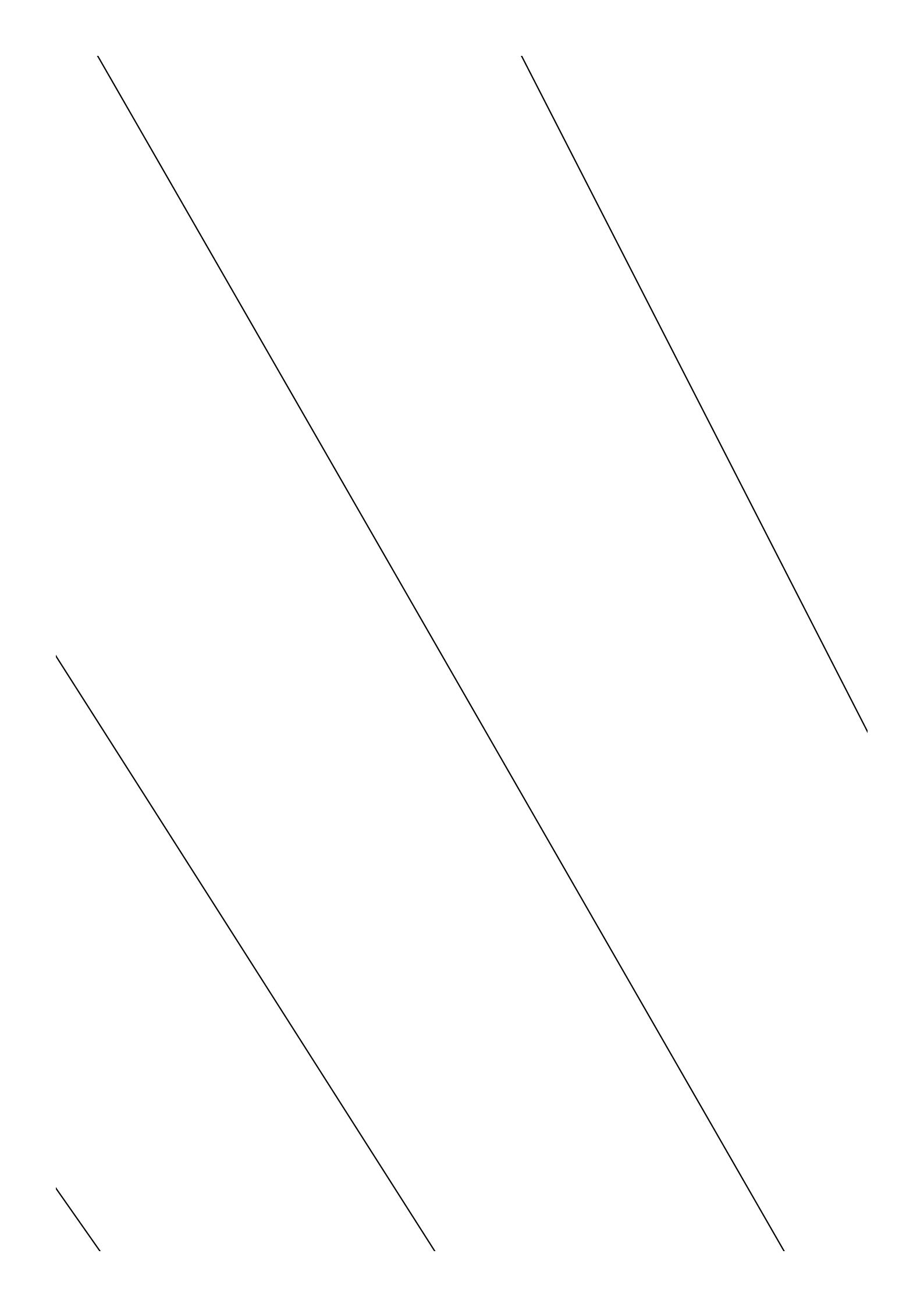


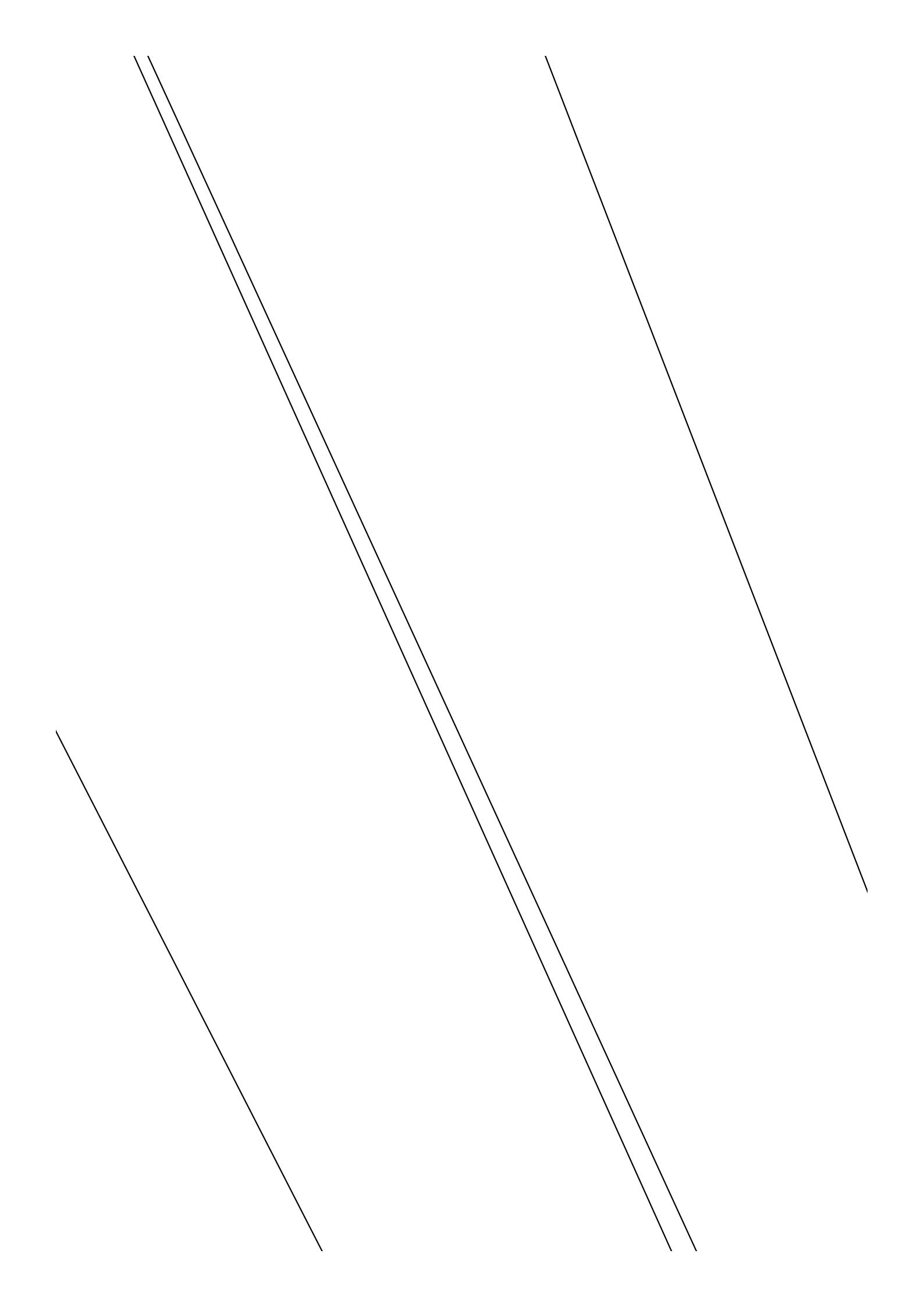


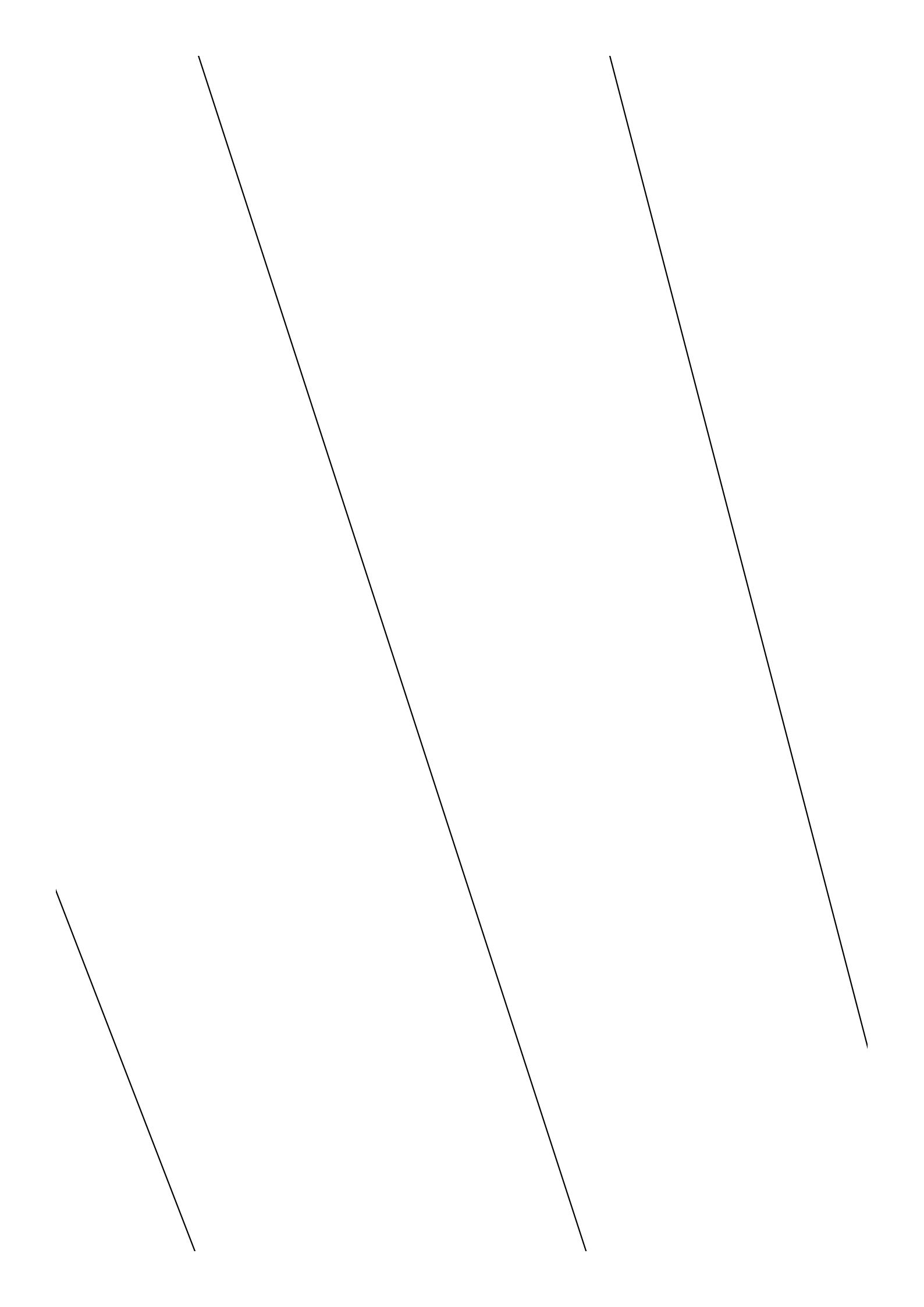


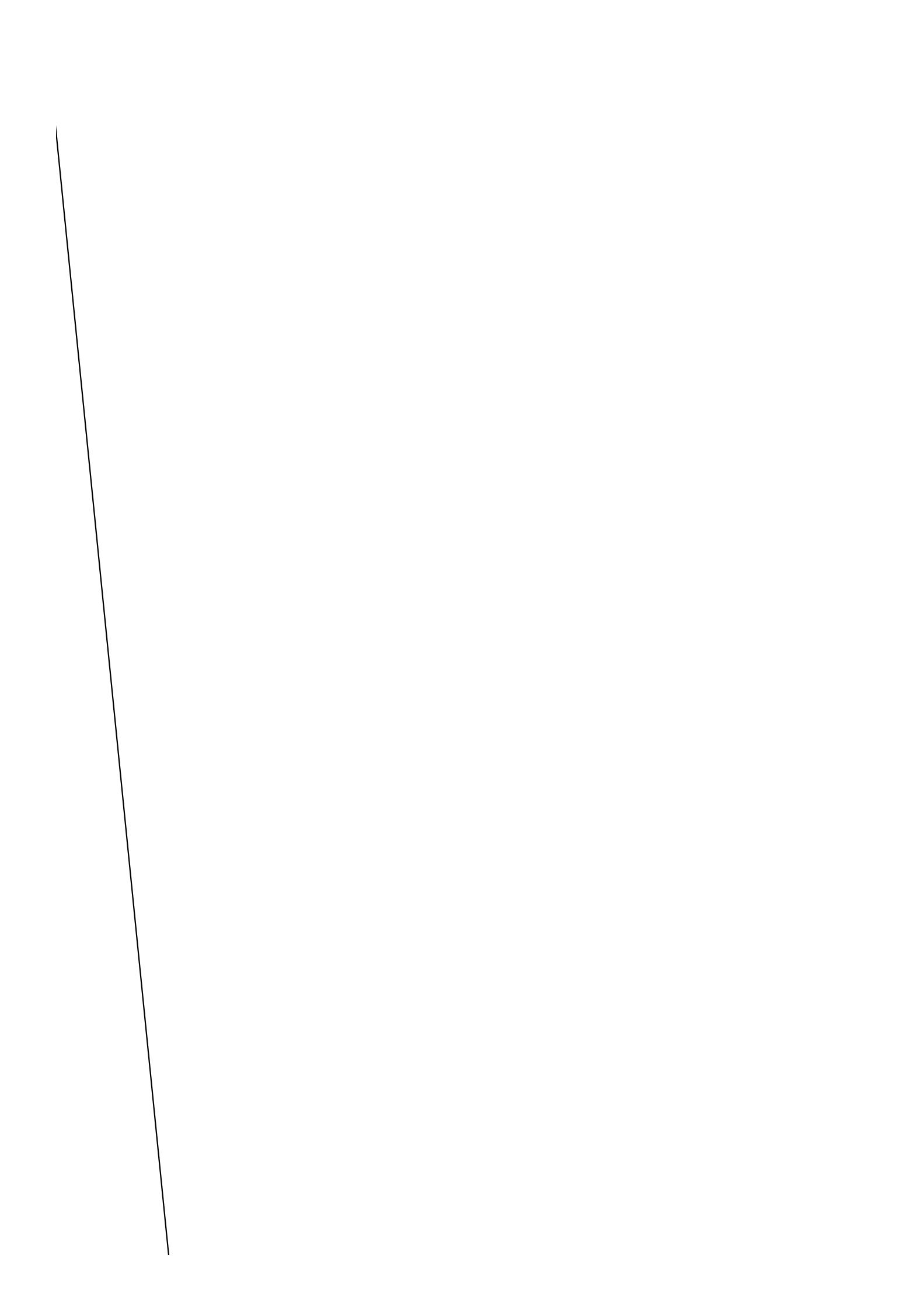














```
+ run()
+ run( in null: <Undefined>)
+ run(): IClassMutationResult
+ run( in null: <Undefined>): IClassMutationResult
+ run( in param: <Undefined>): IClassMutationResult
+ run( in param: Object): IClassMutationResult
+ canRetry()
+ canRetry( in null: <Undefined>)
```

AbstractWork

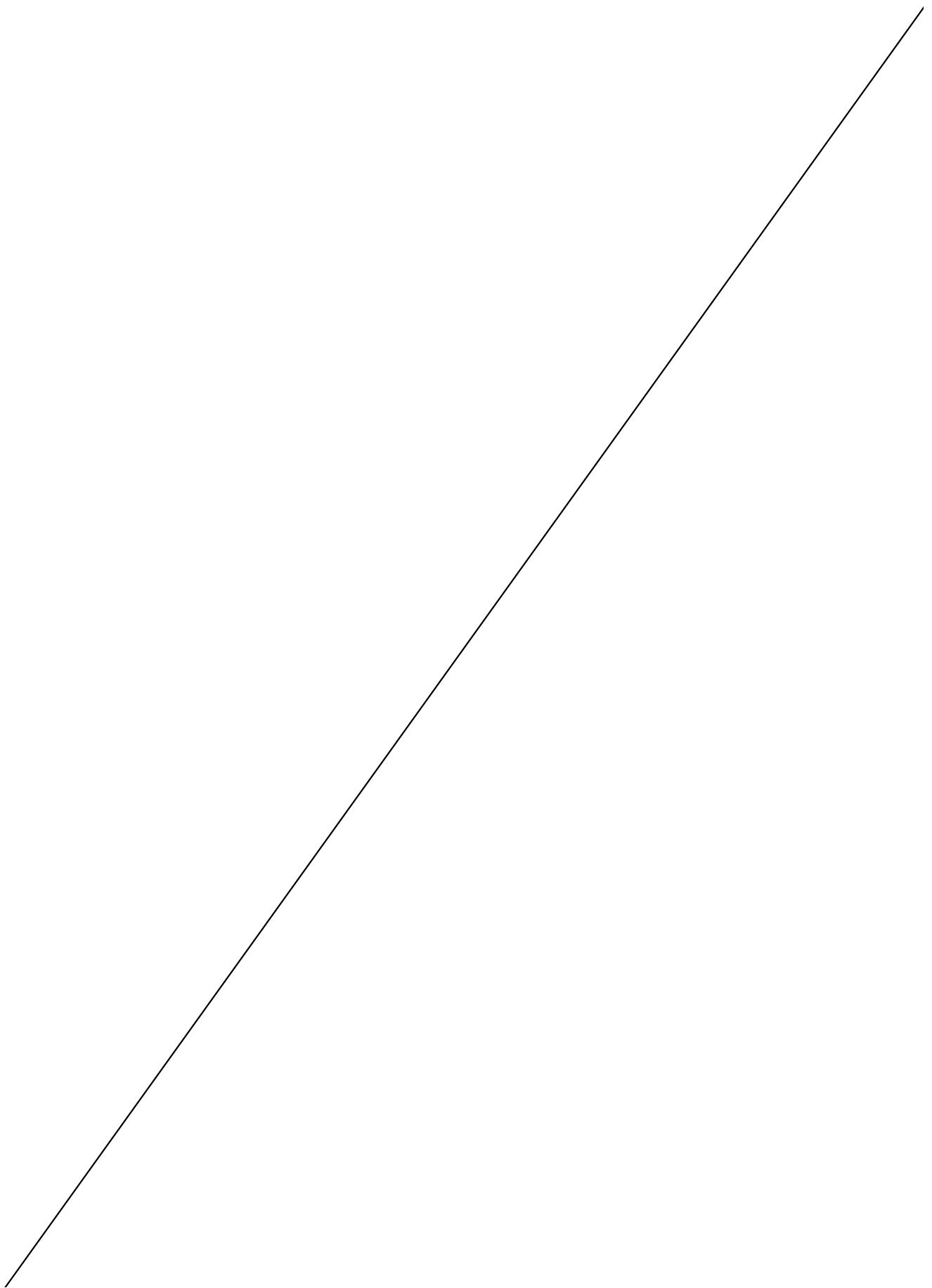
```
getClientId
canRetry
getRetries
getSerialVersionUID
```

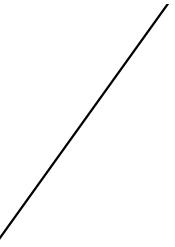
AbstractWork implements IWork

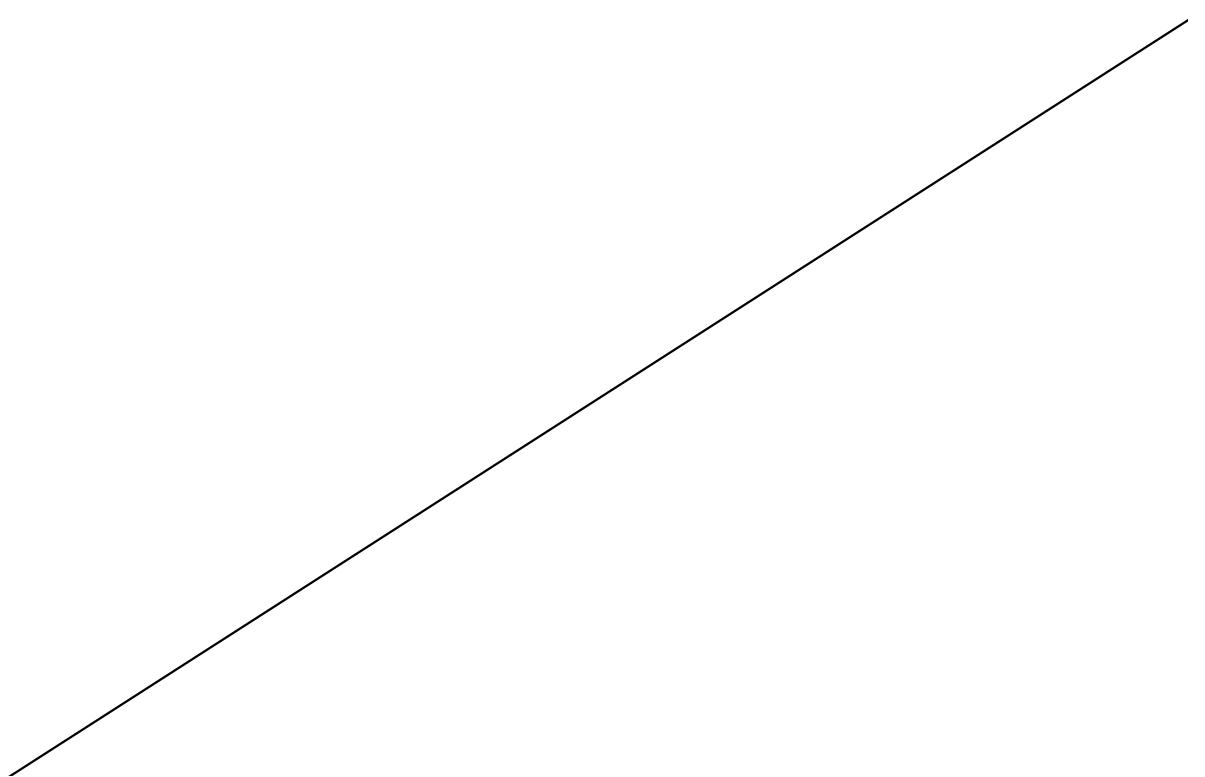
«Interface»

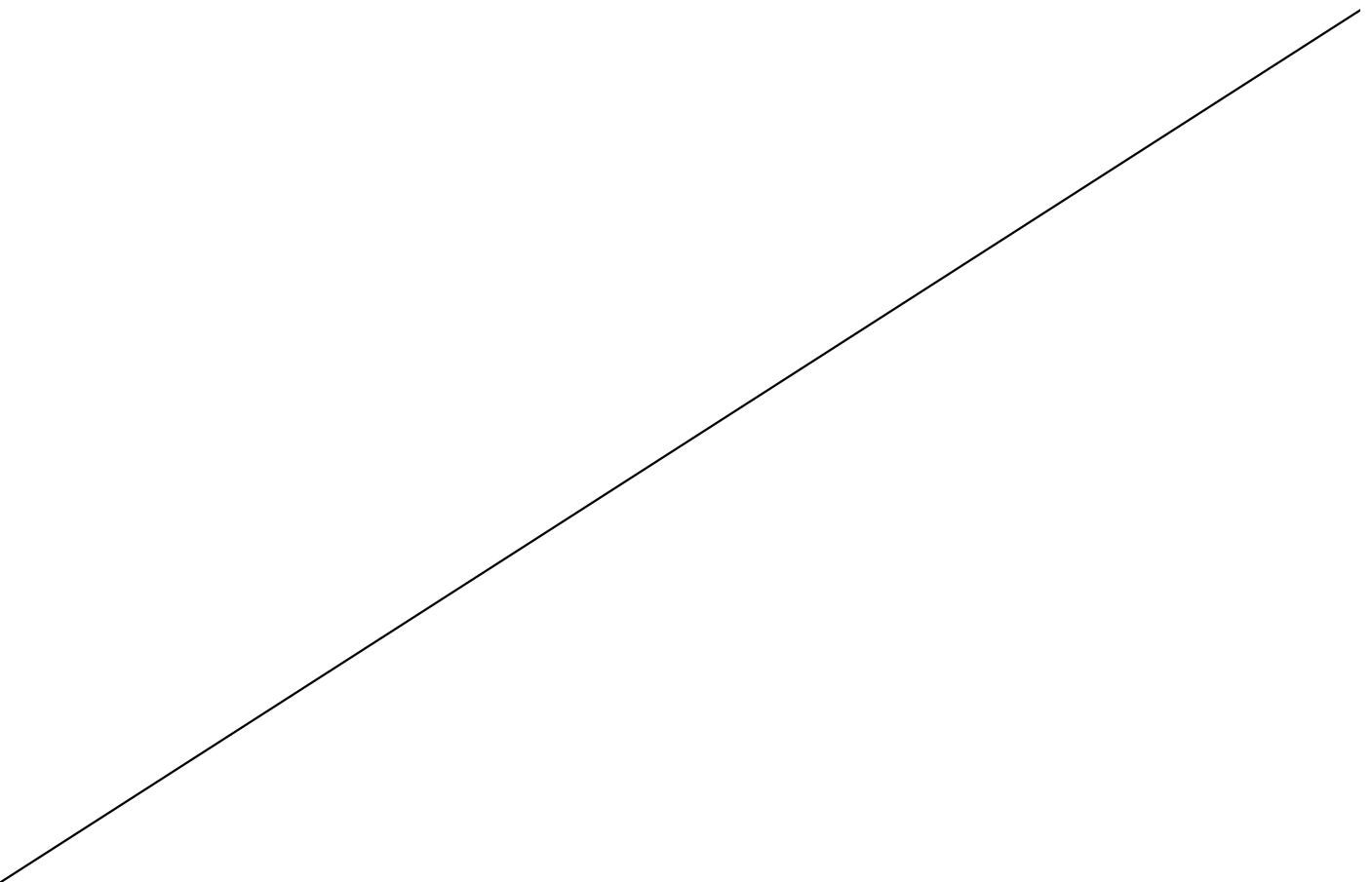
IWork

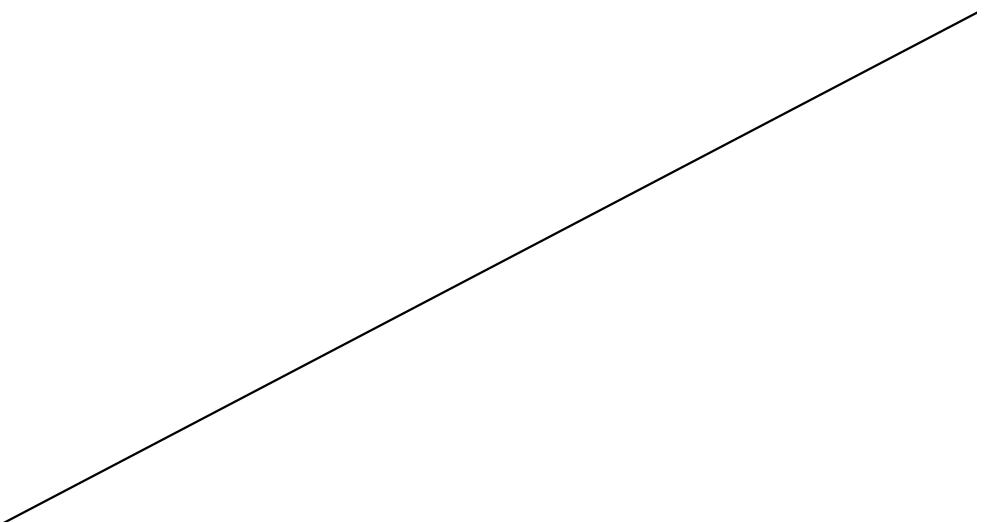
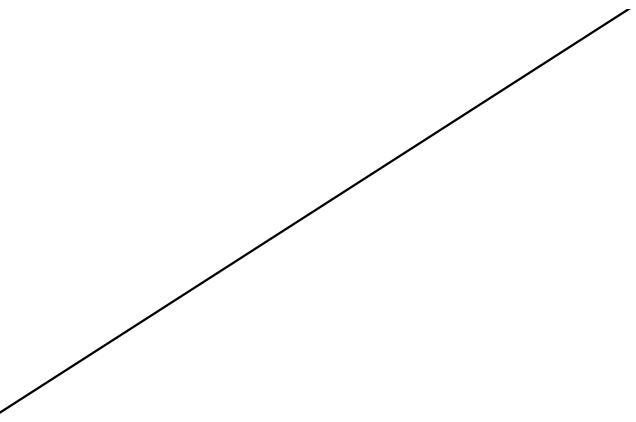
```
- getClientId(): long
- run( in param: Object): IClassMutationResult
- canRetry(): boolean
```

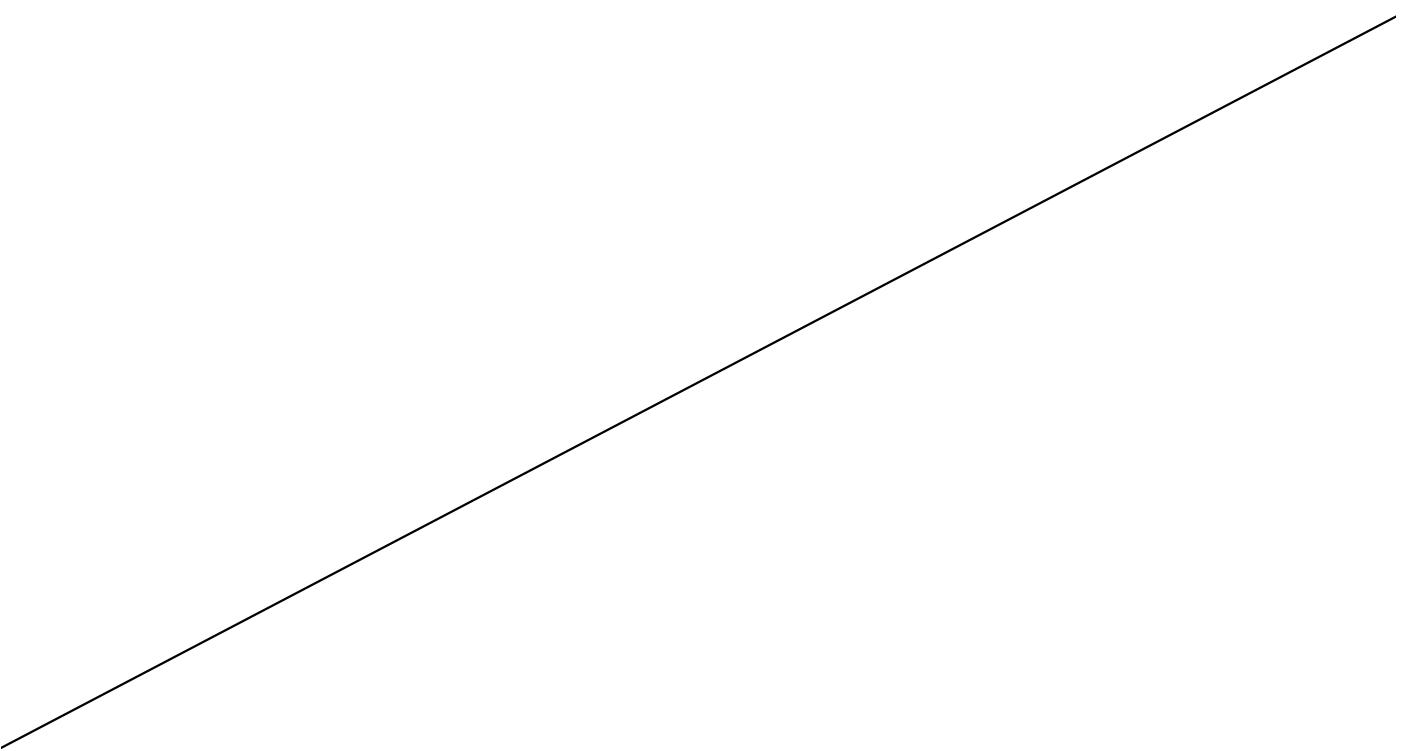



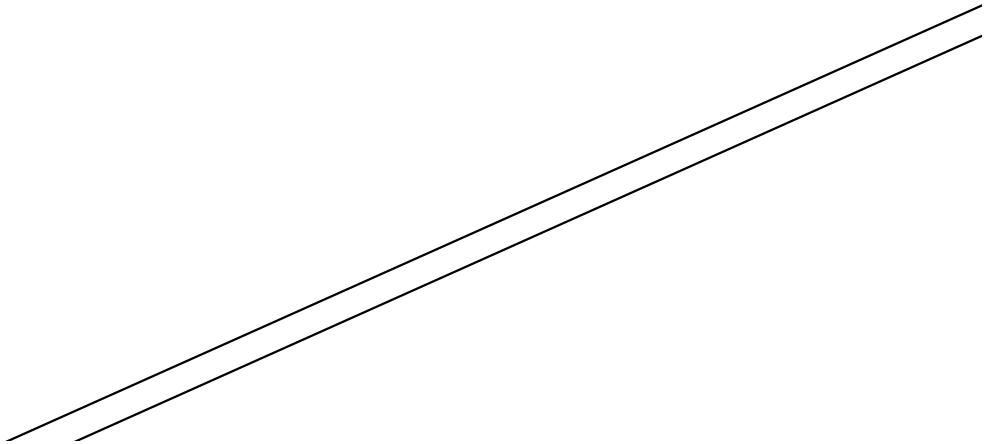
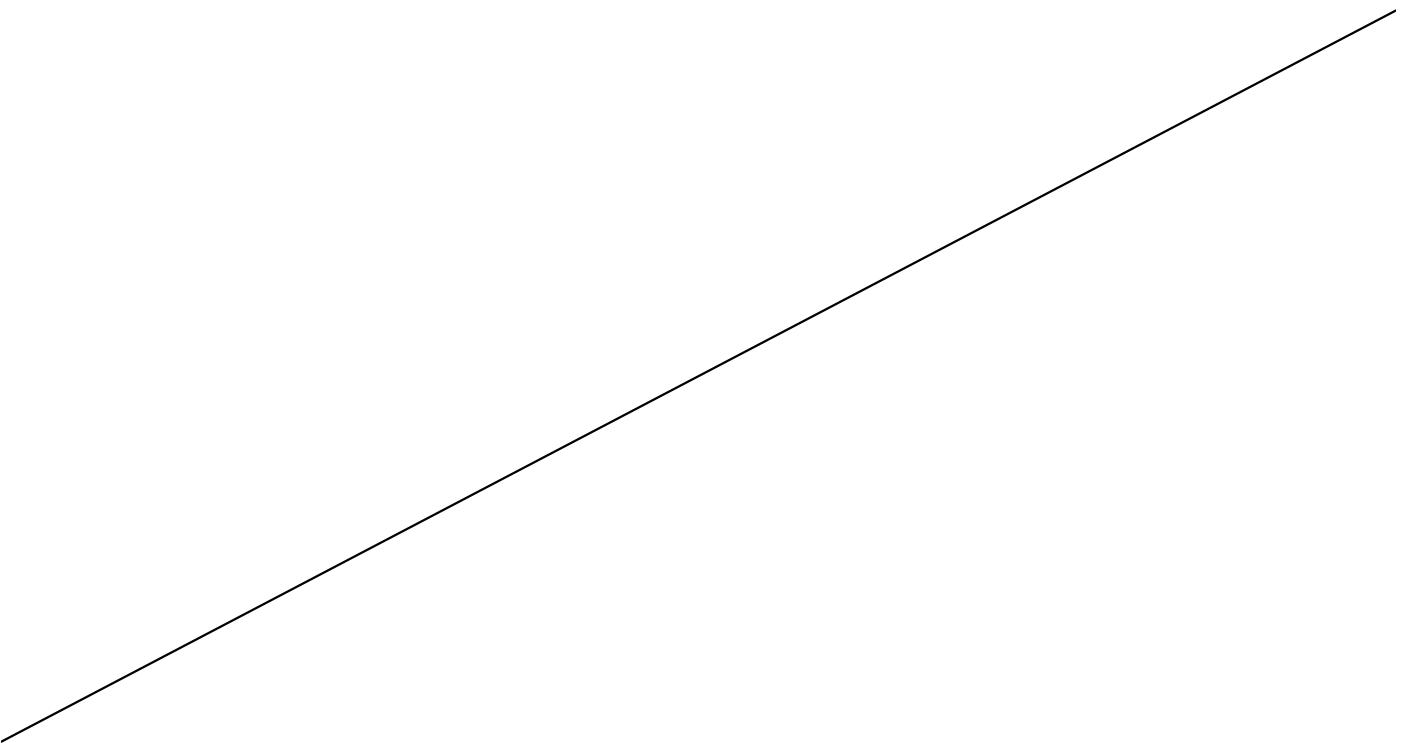






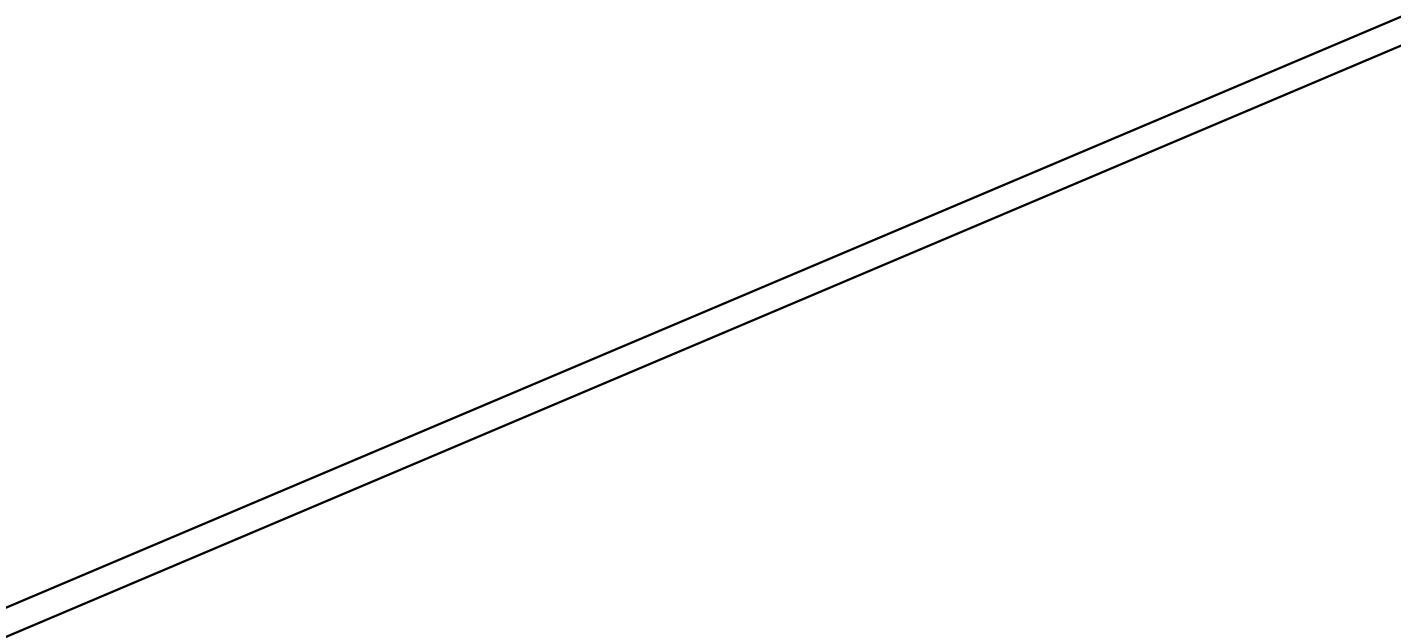


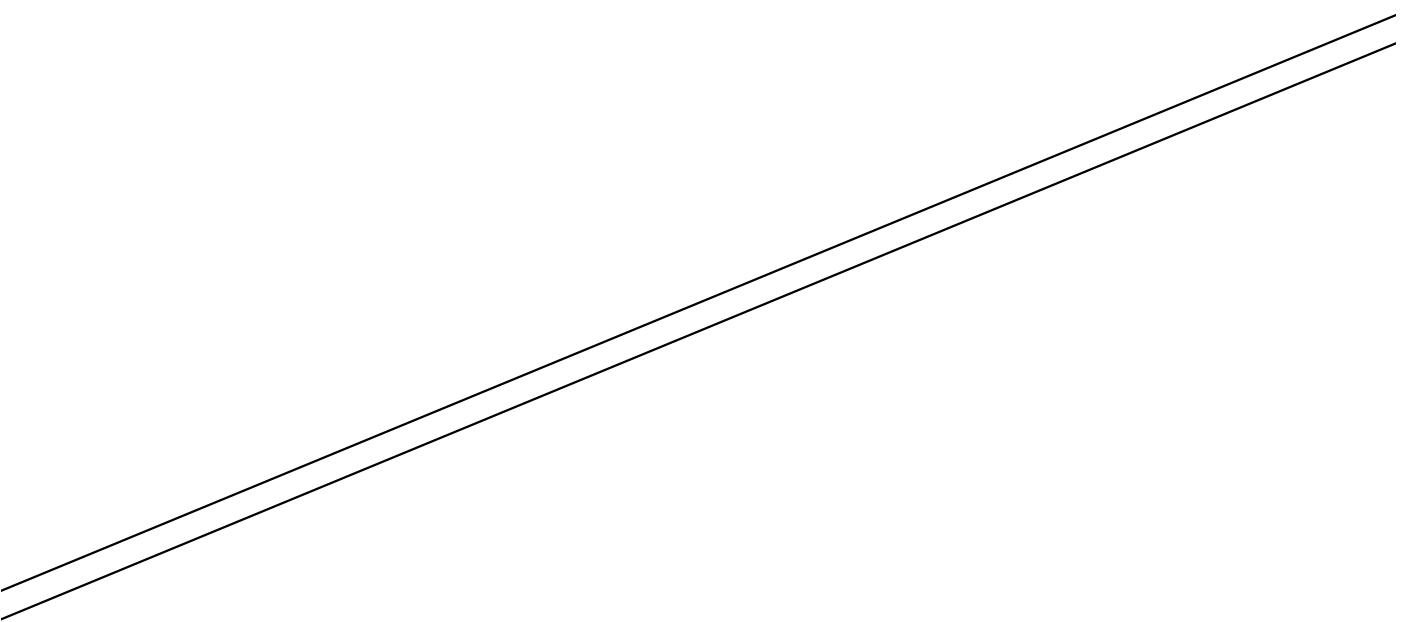


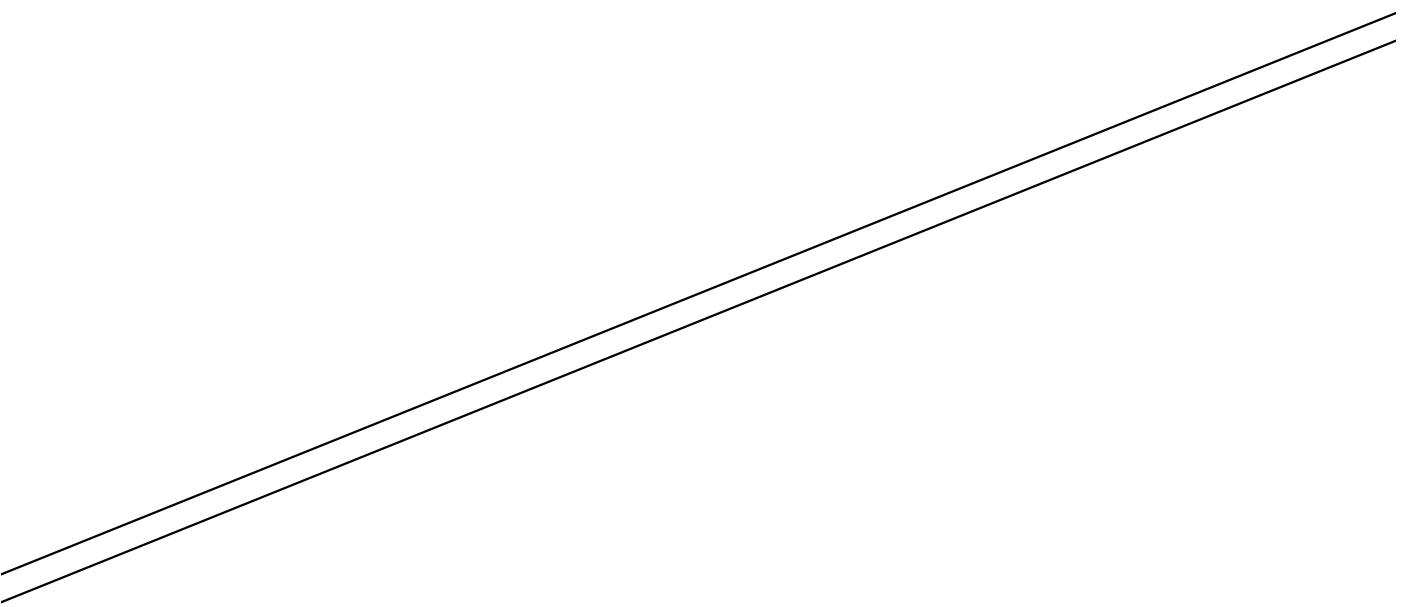


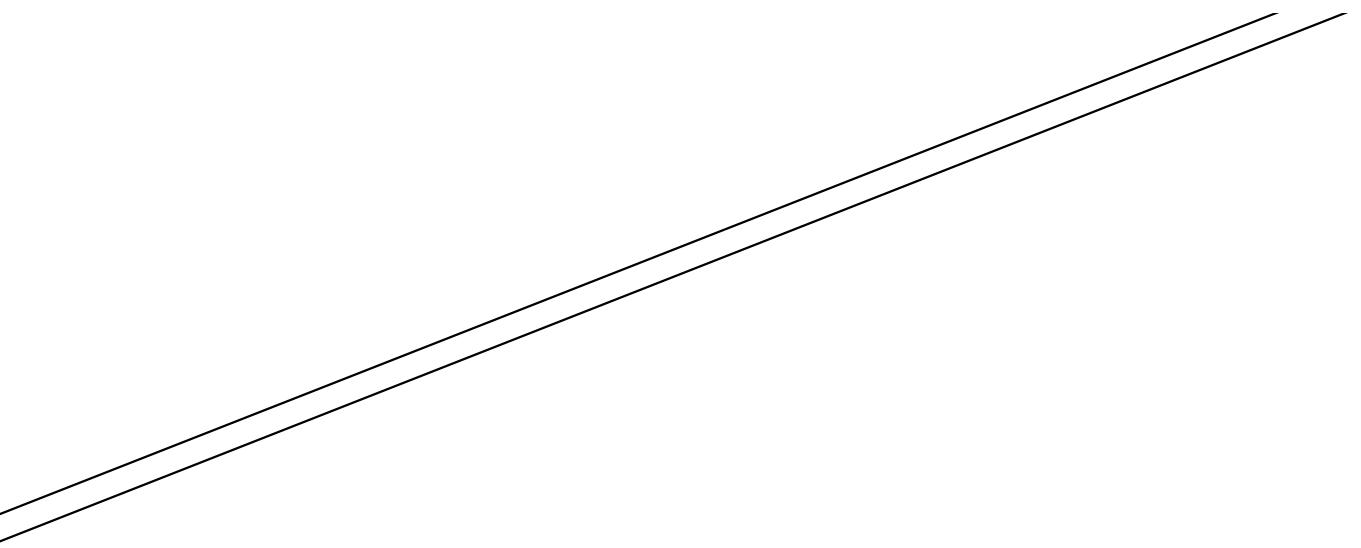
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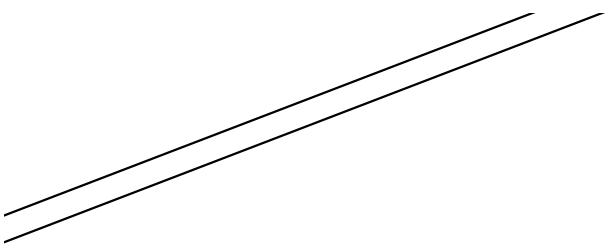
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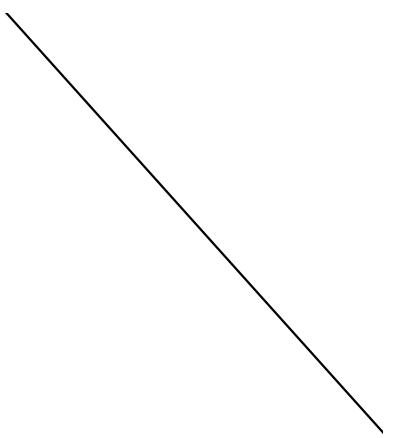


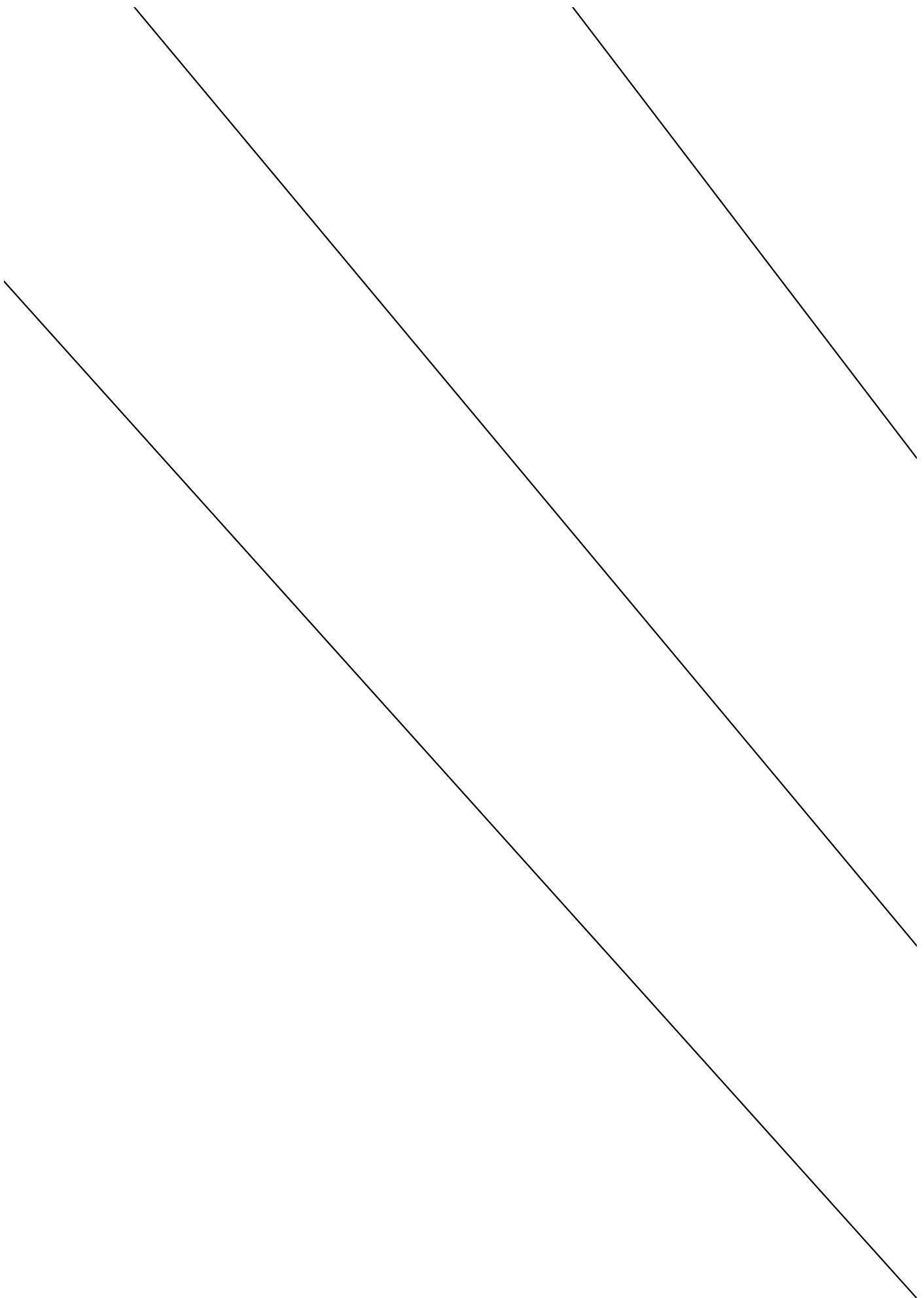


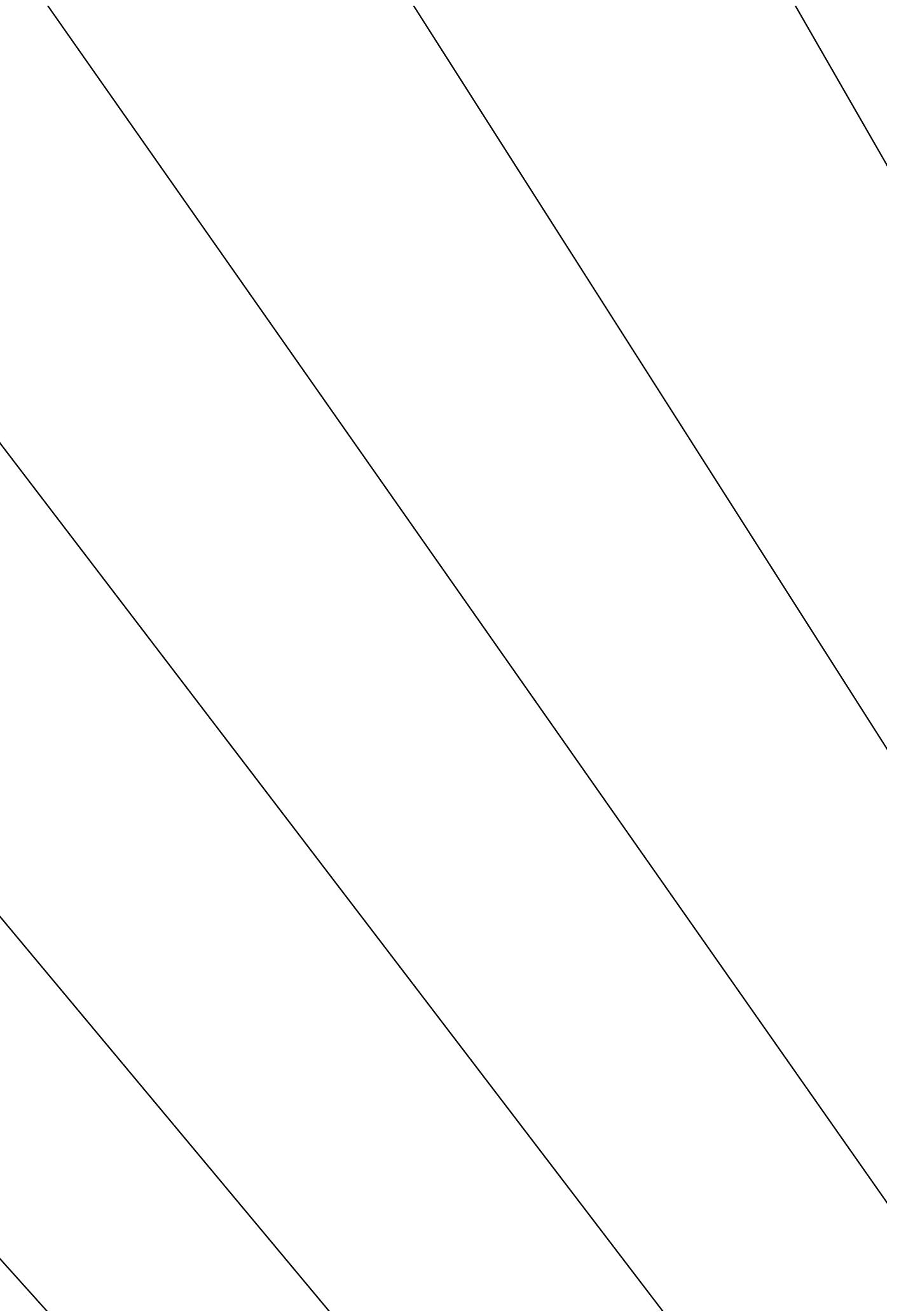


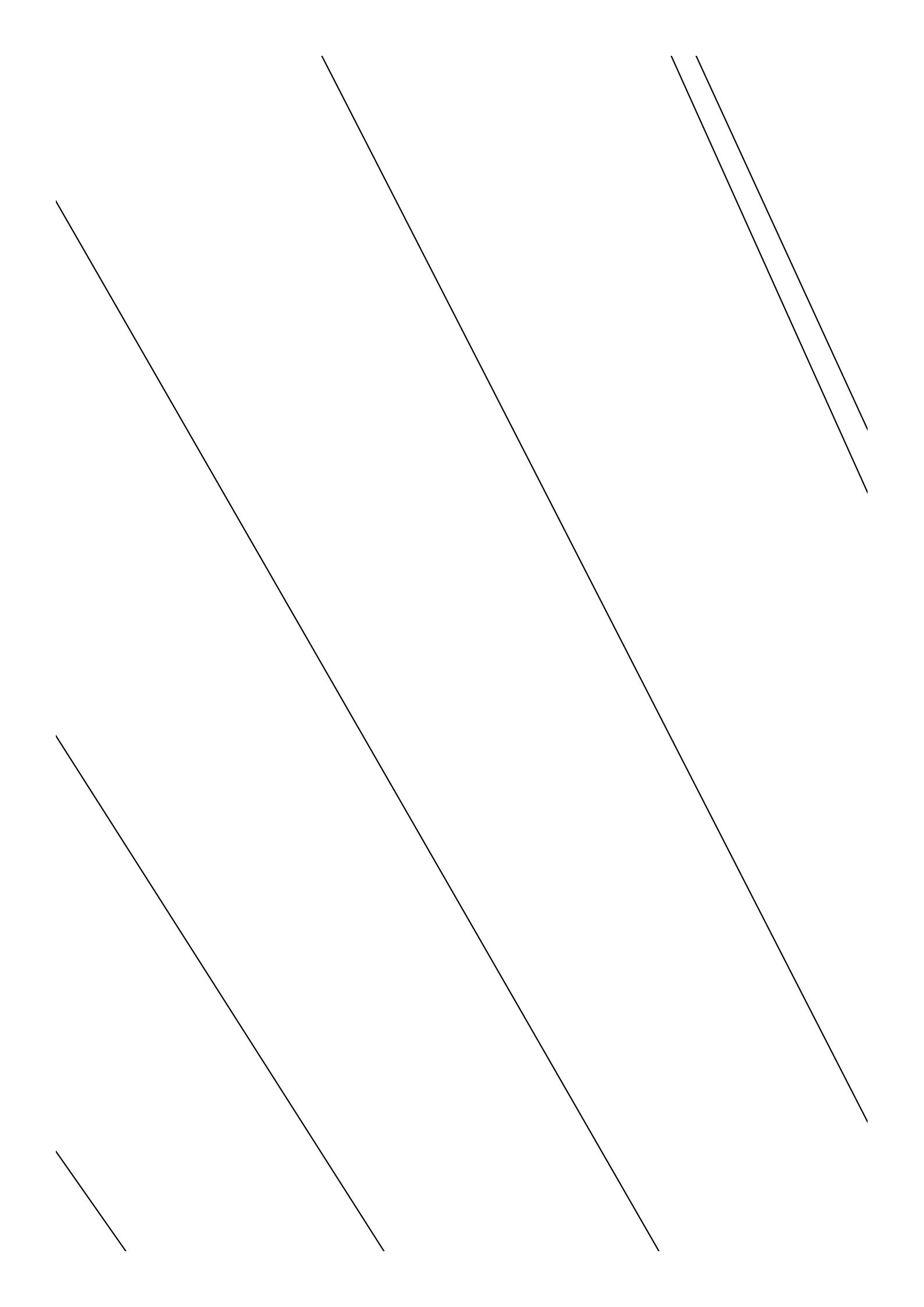


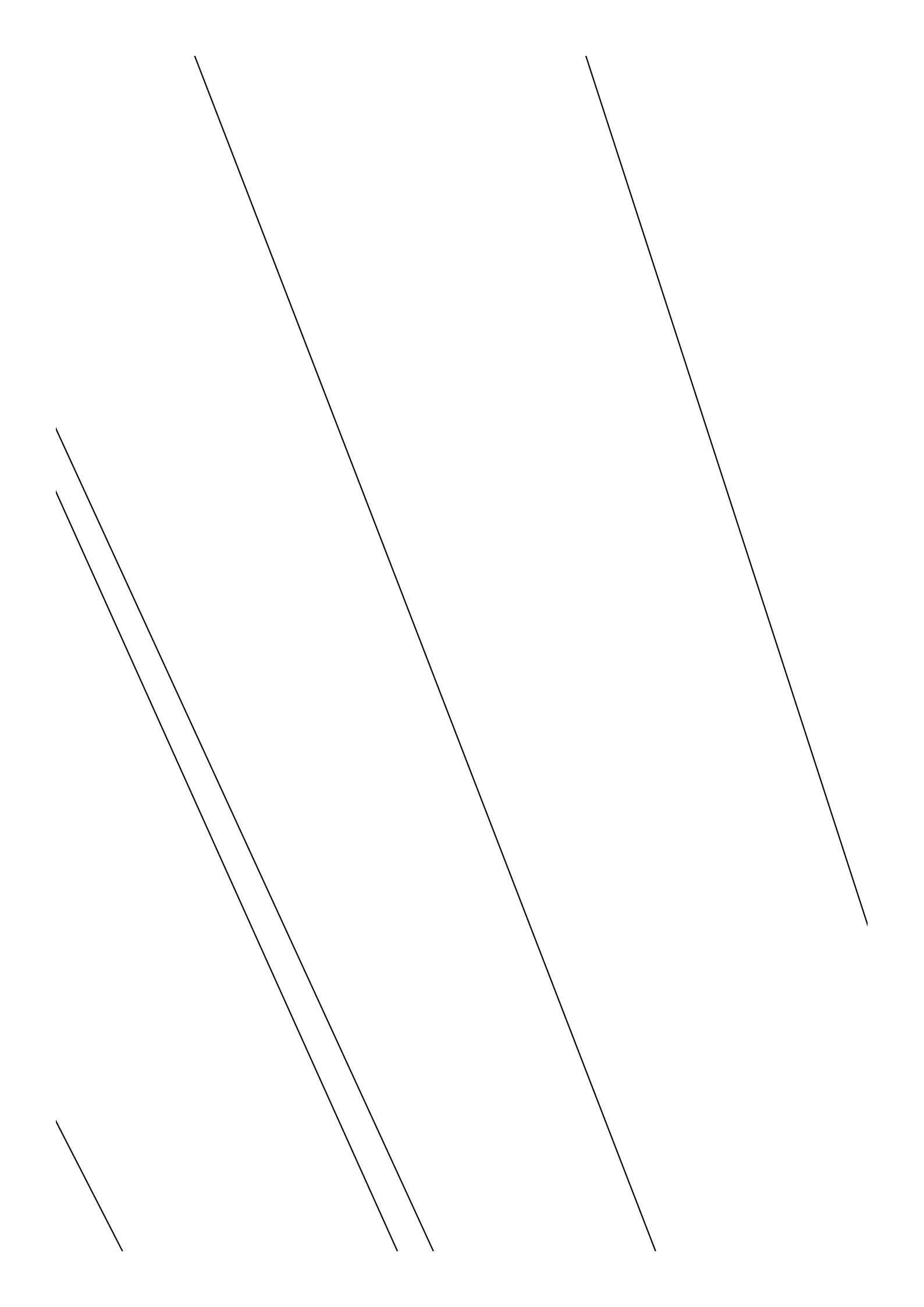


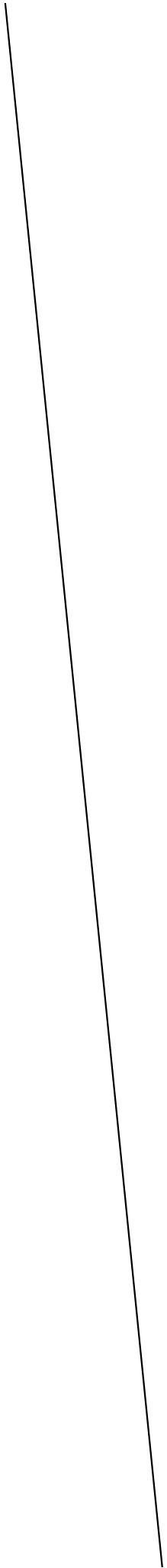


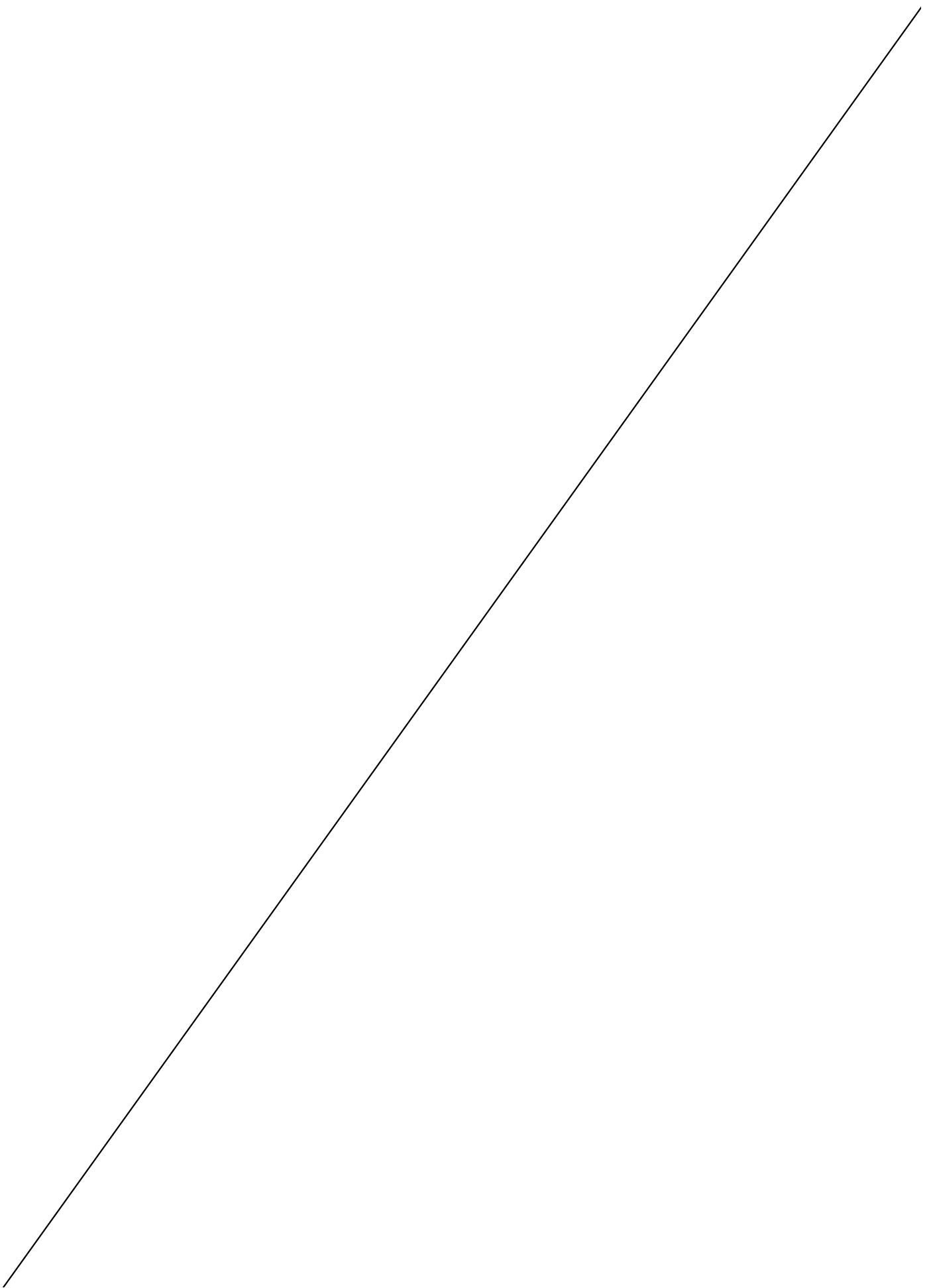






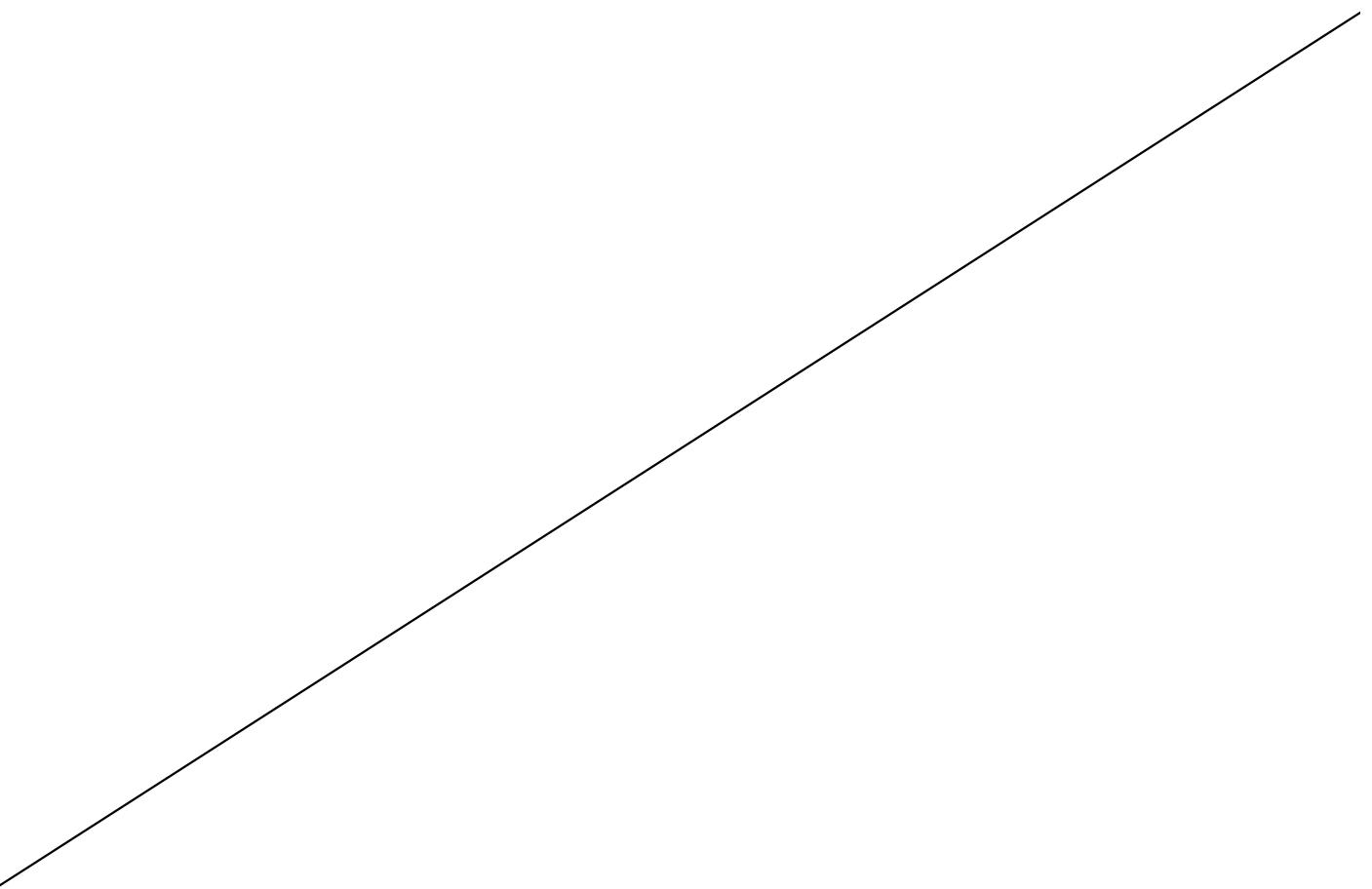


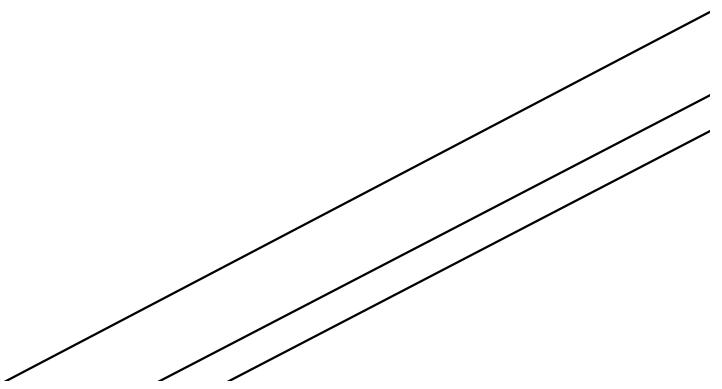
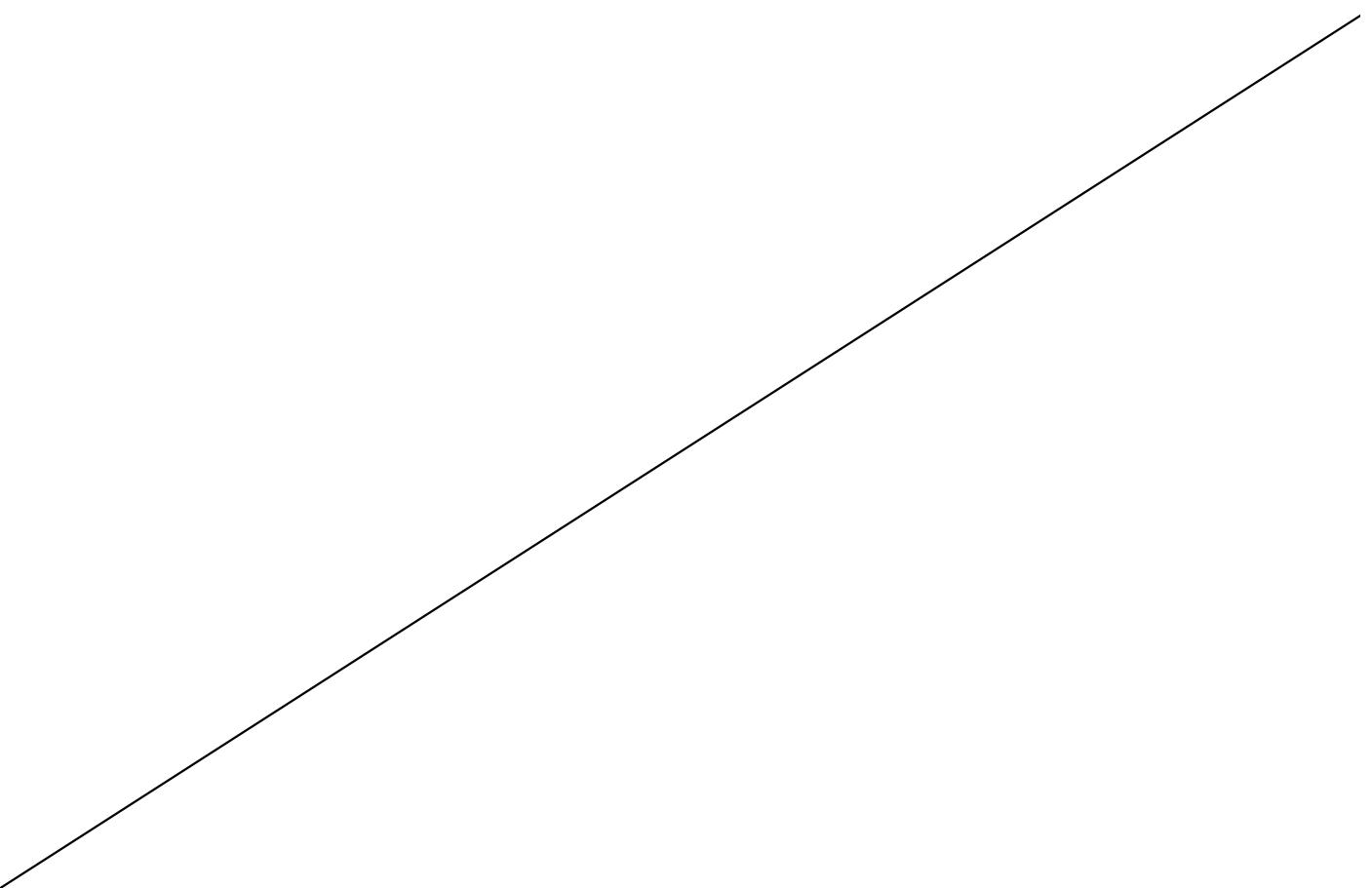




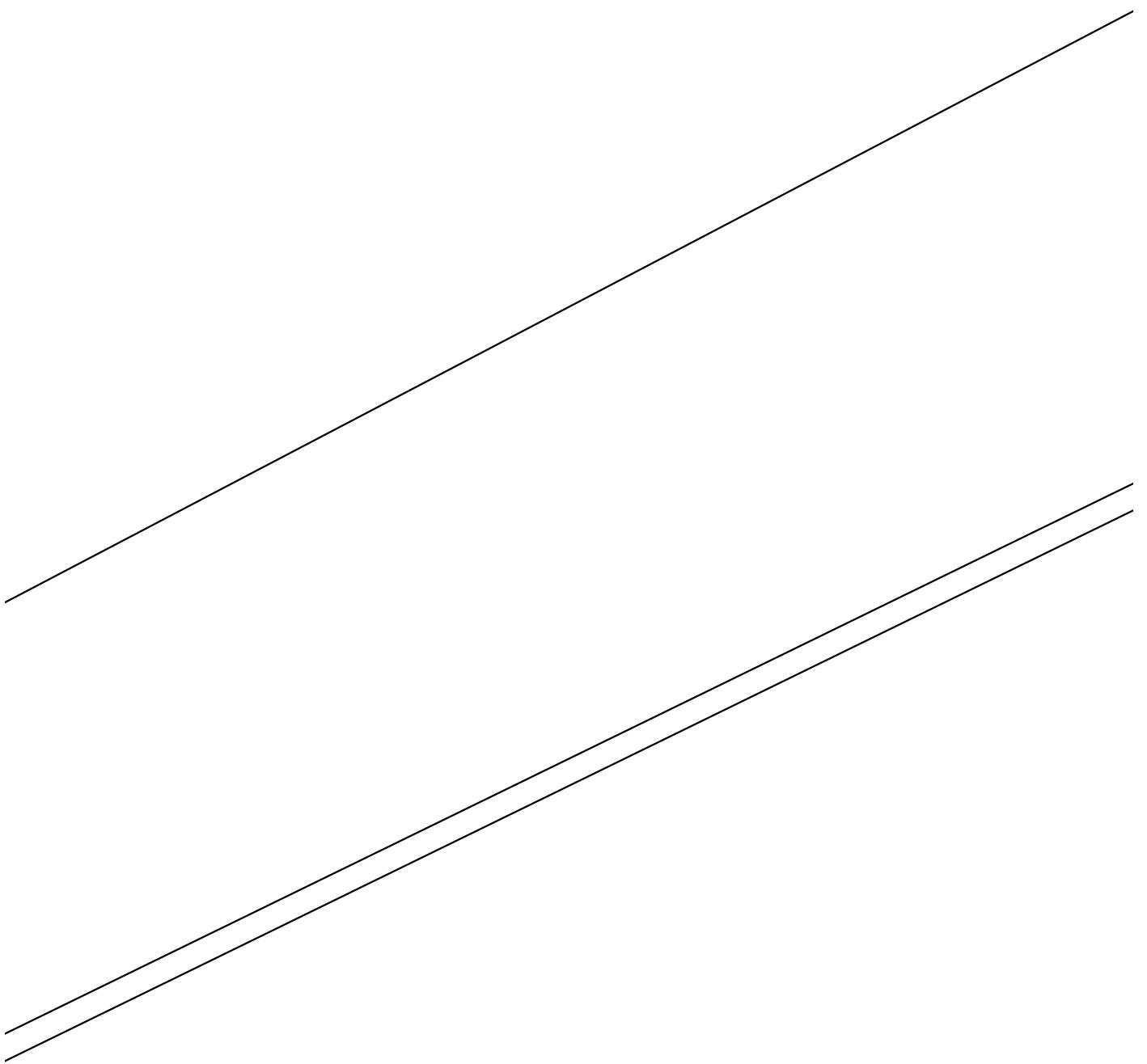
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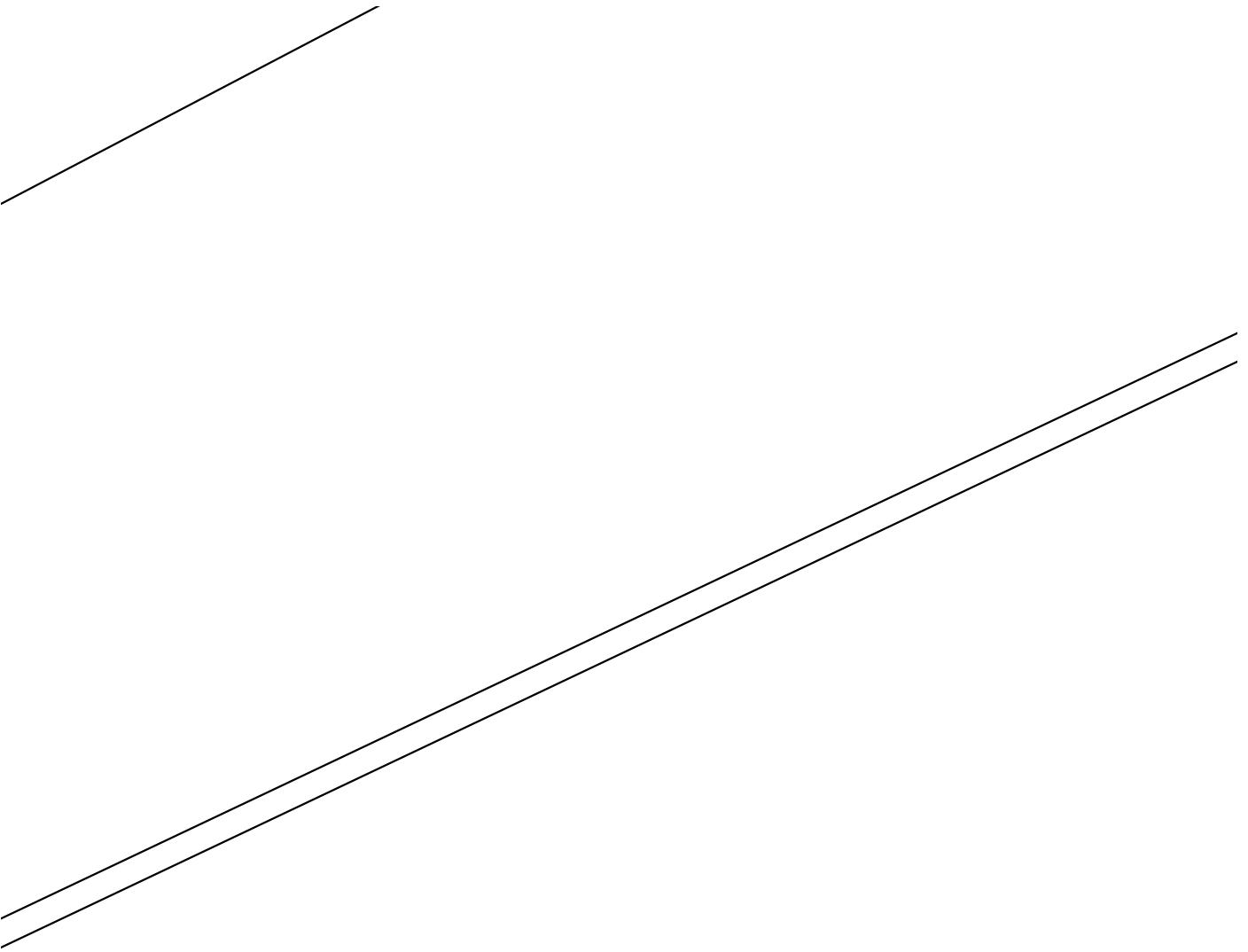


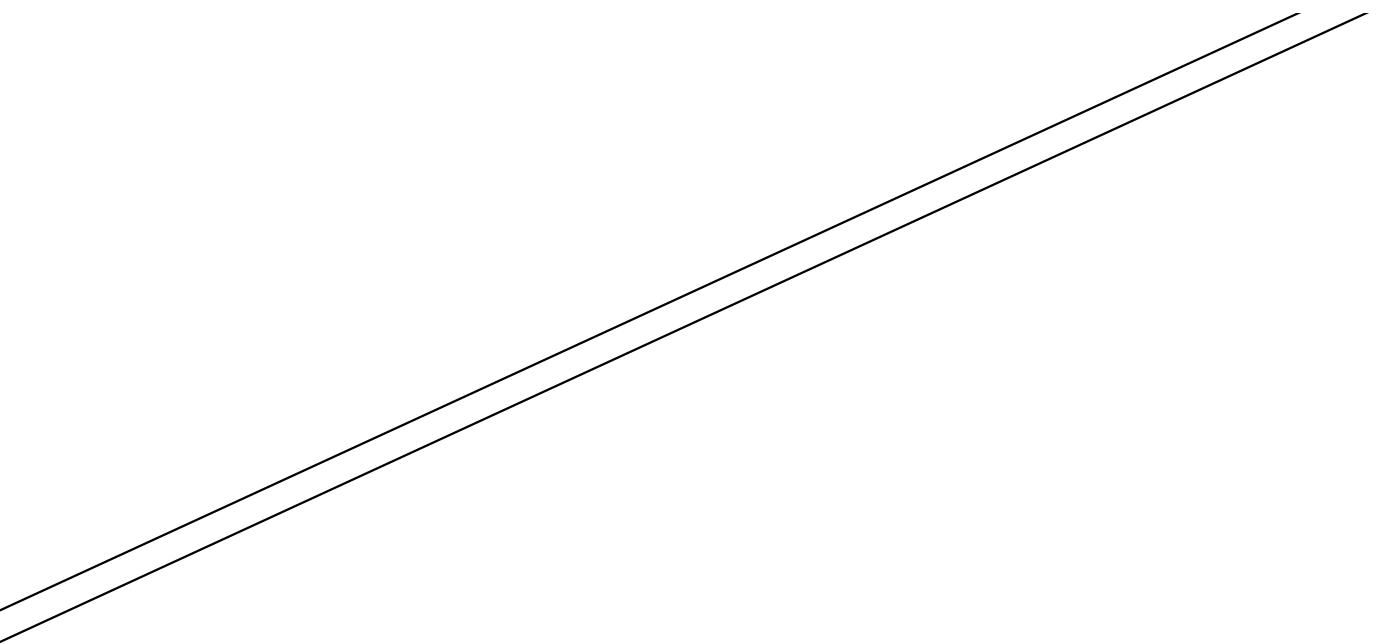


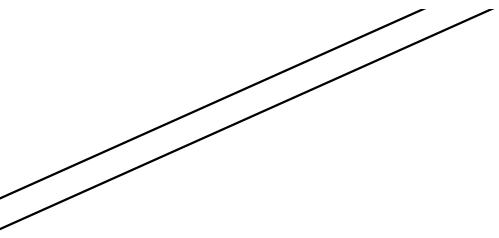


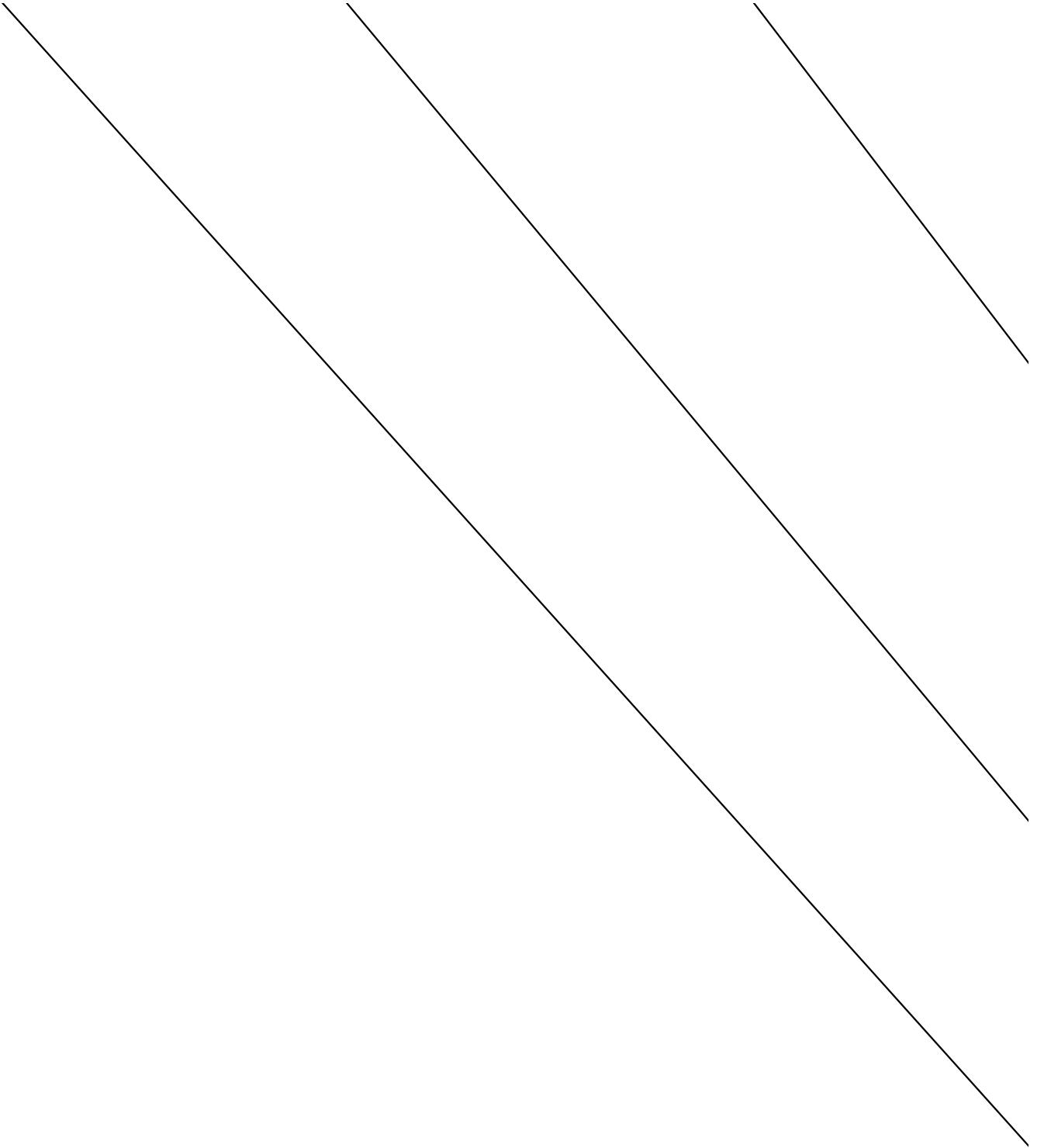


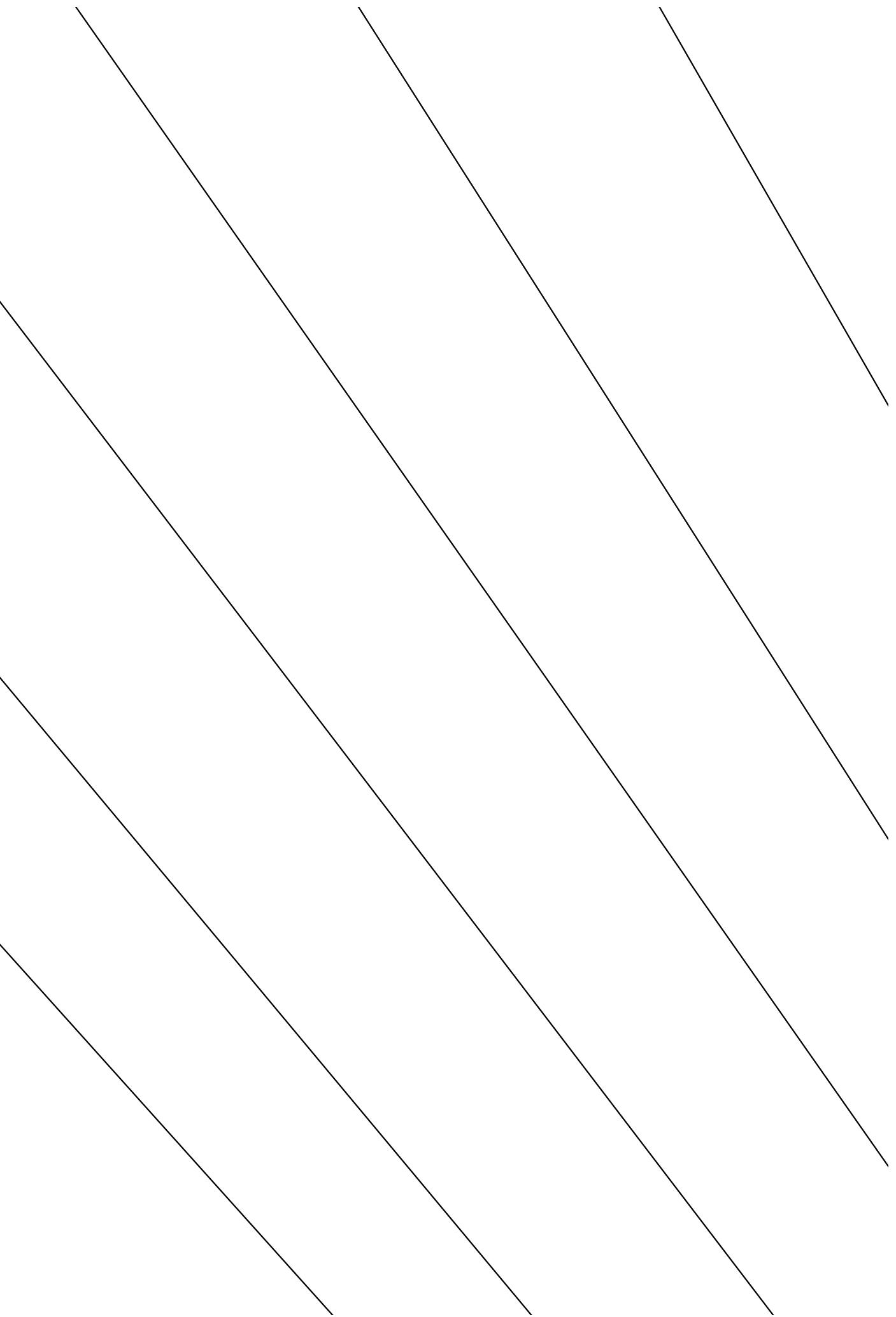


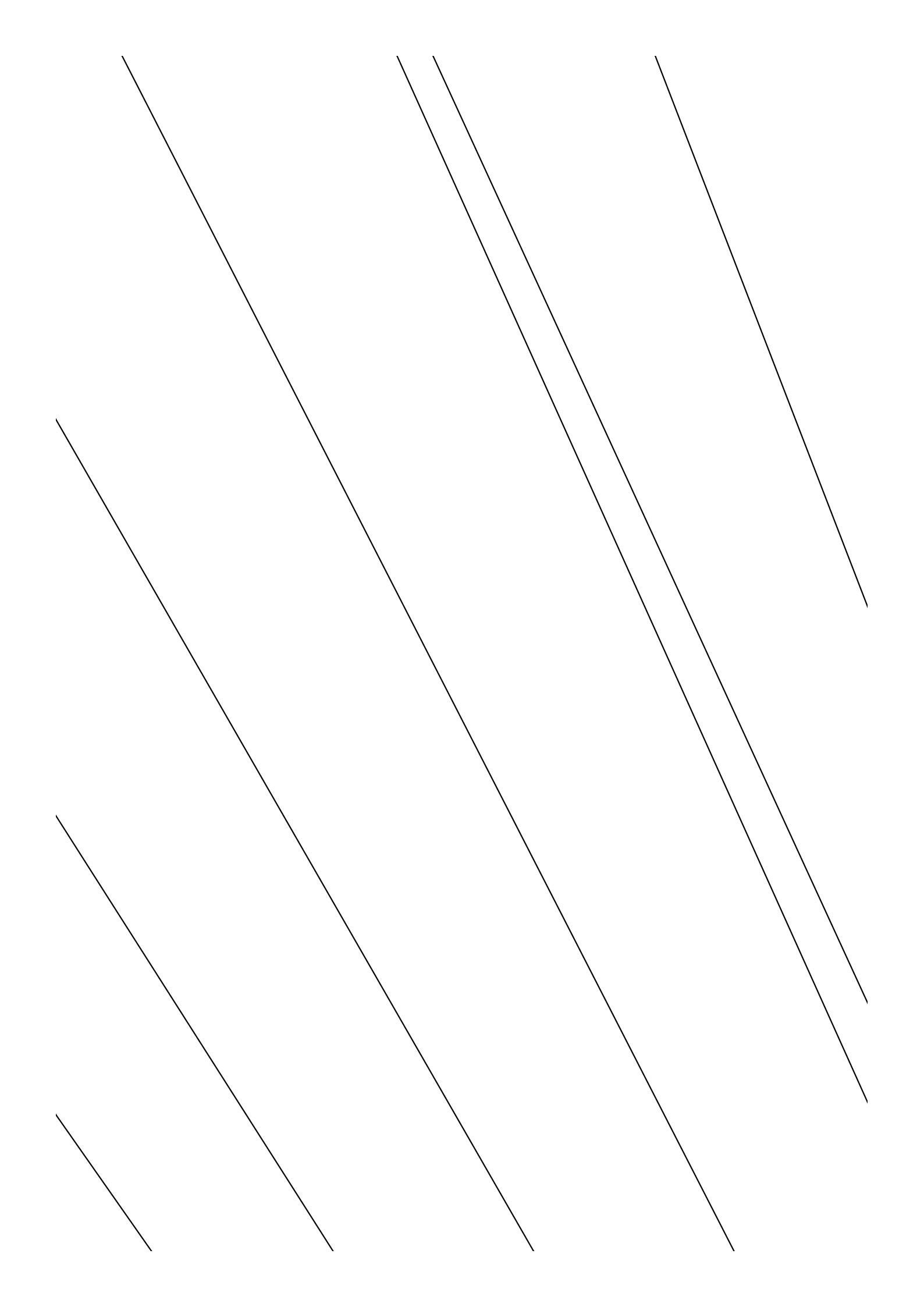


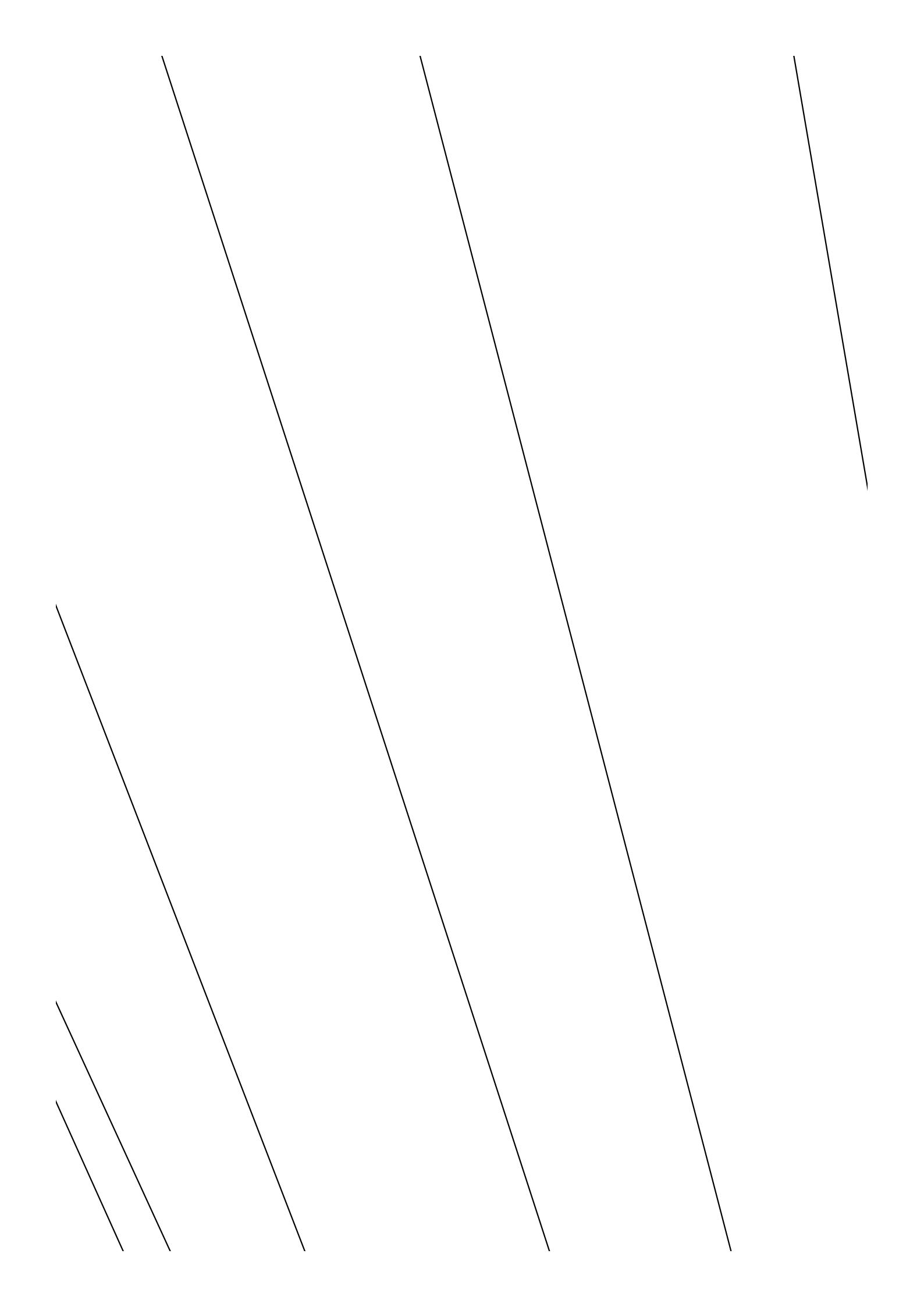




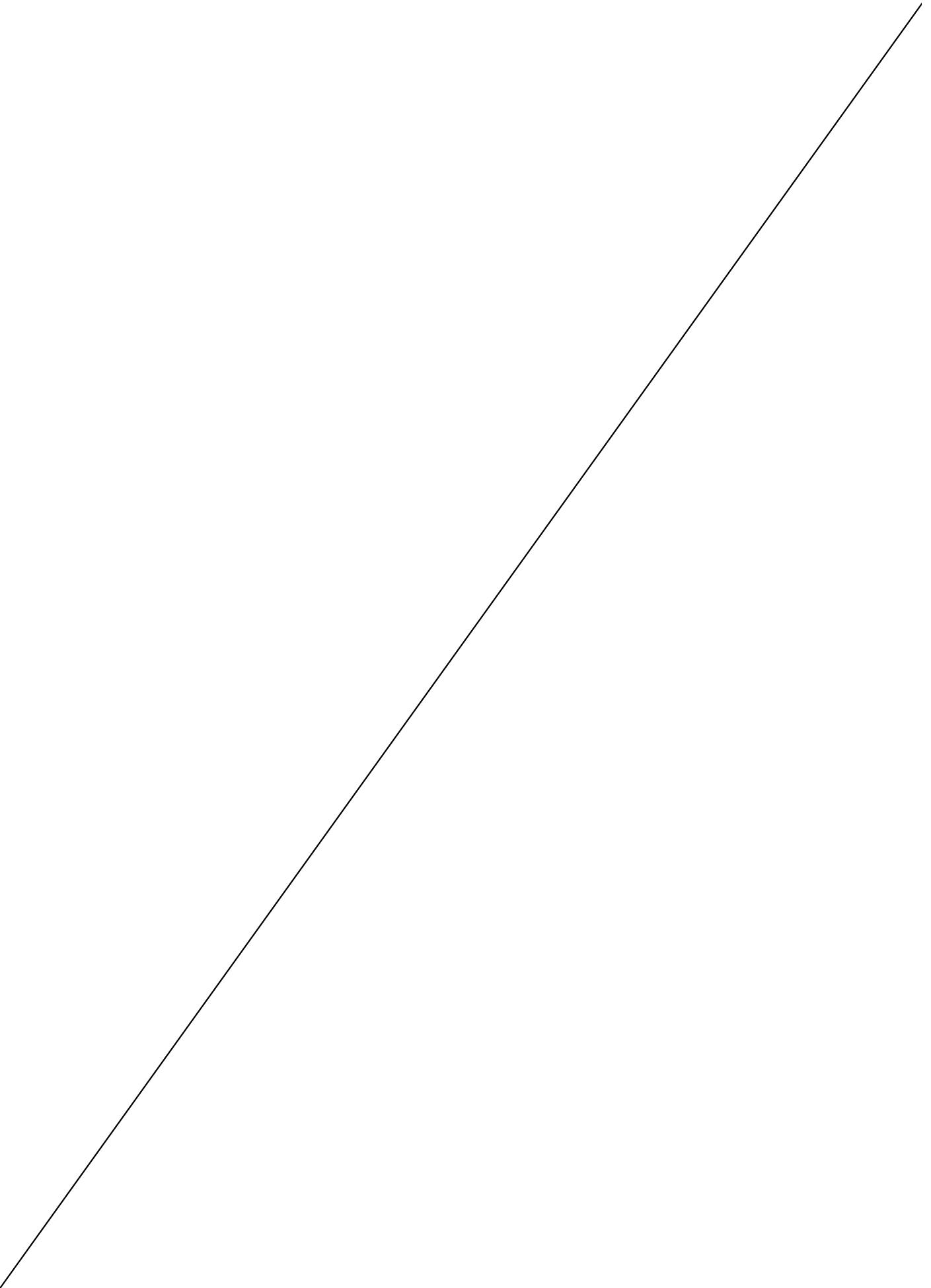




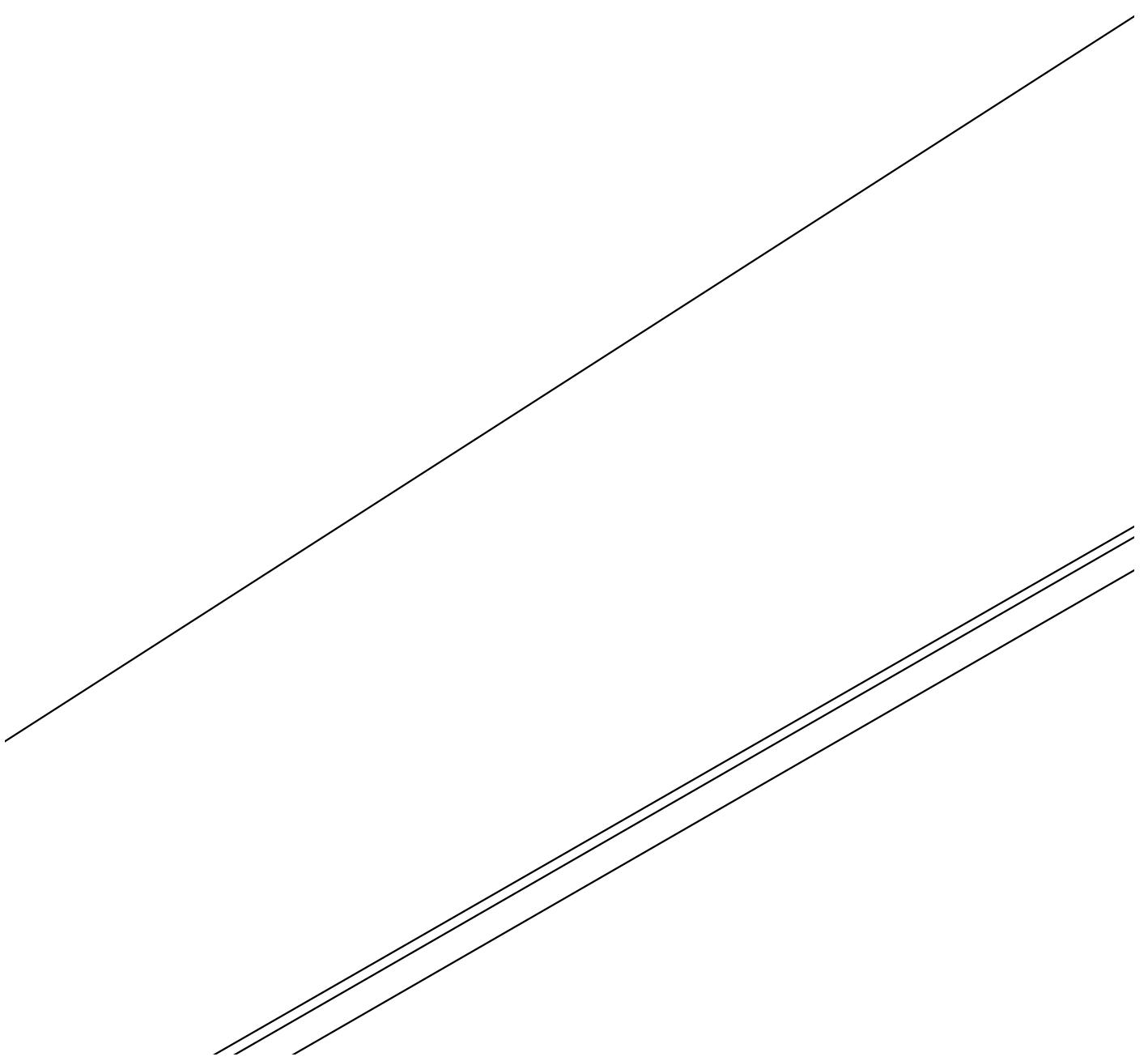


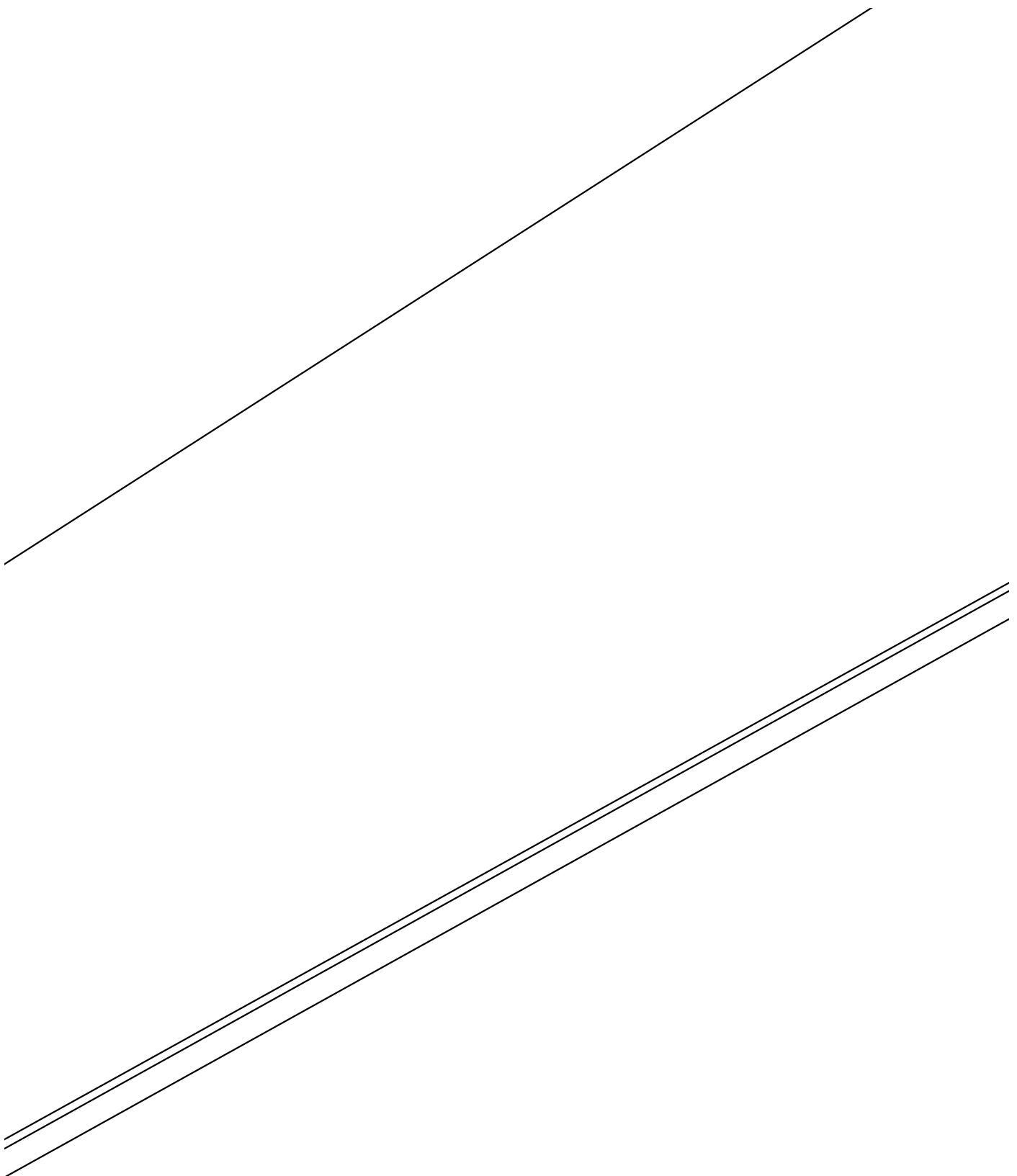


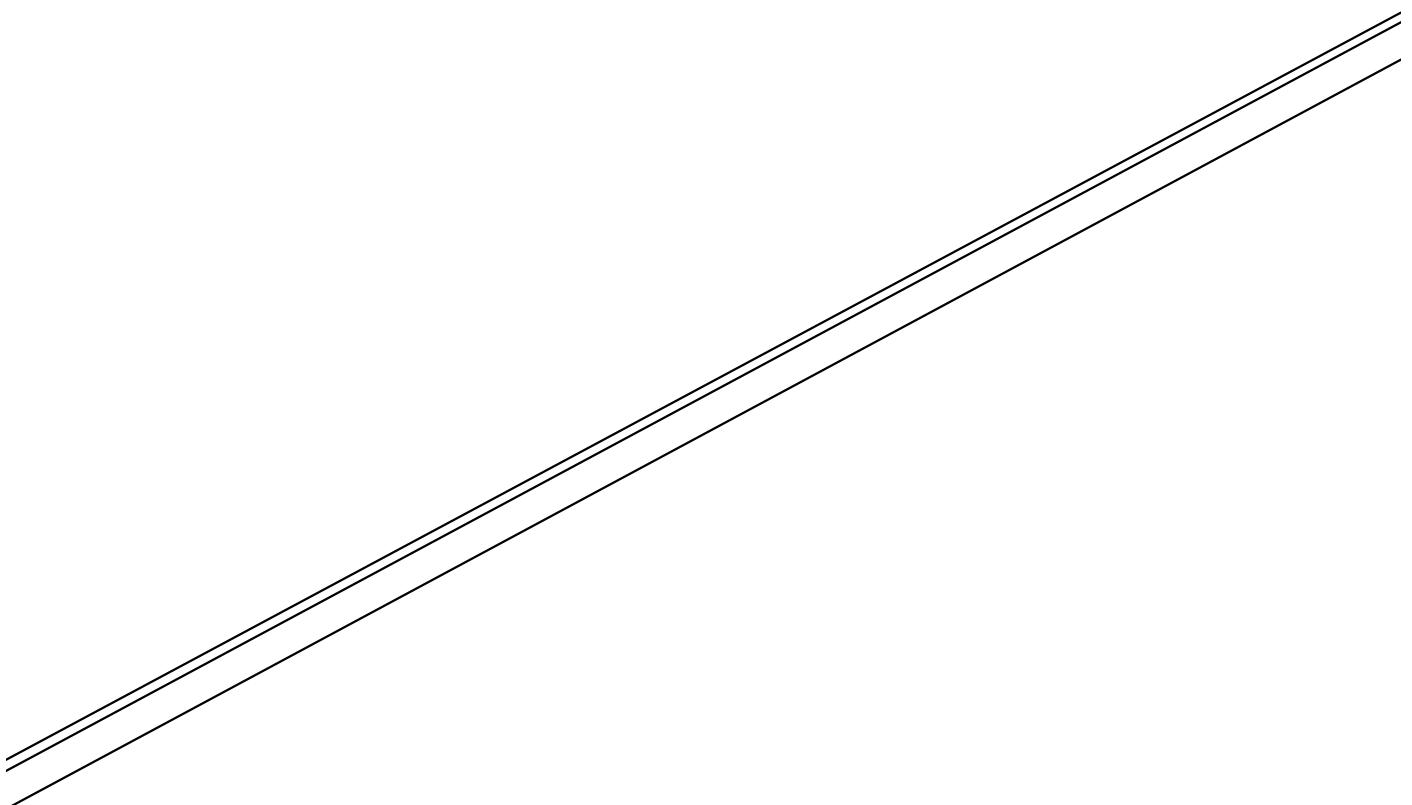


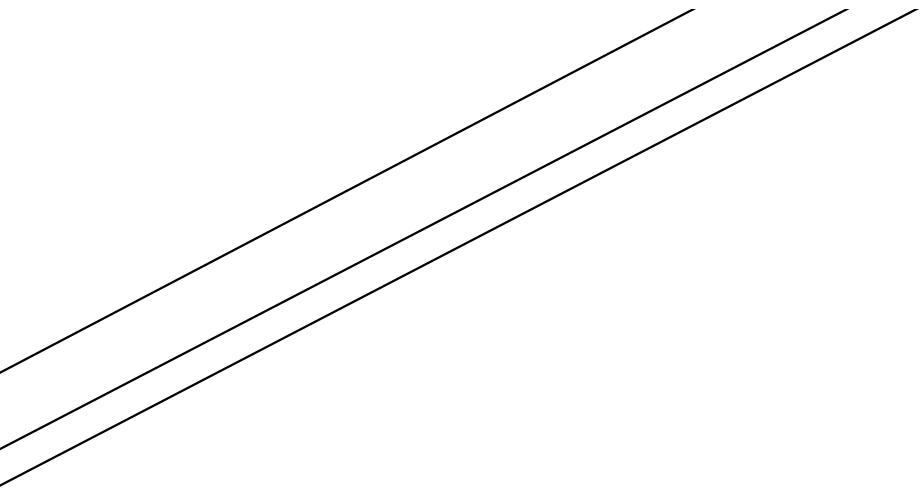


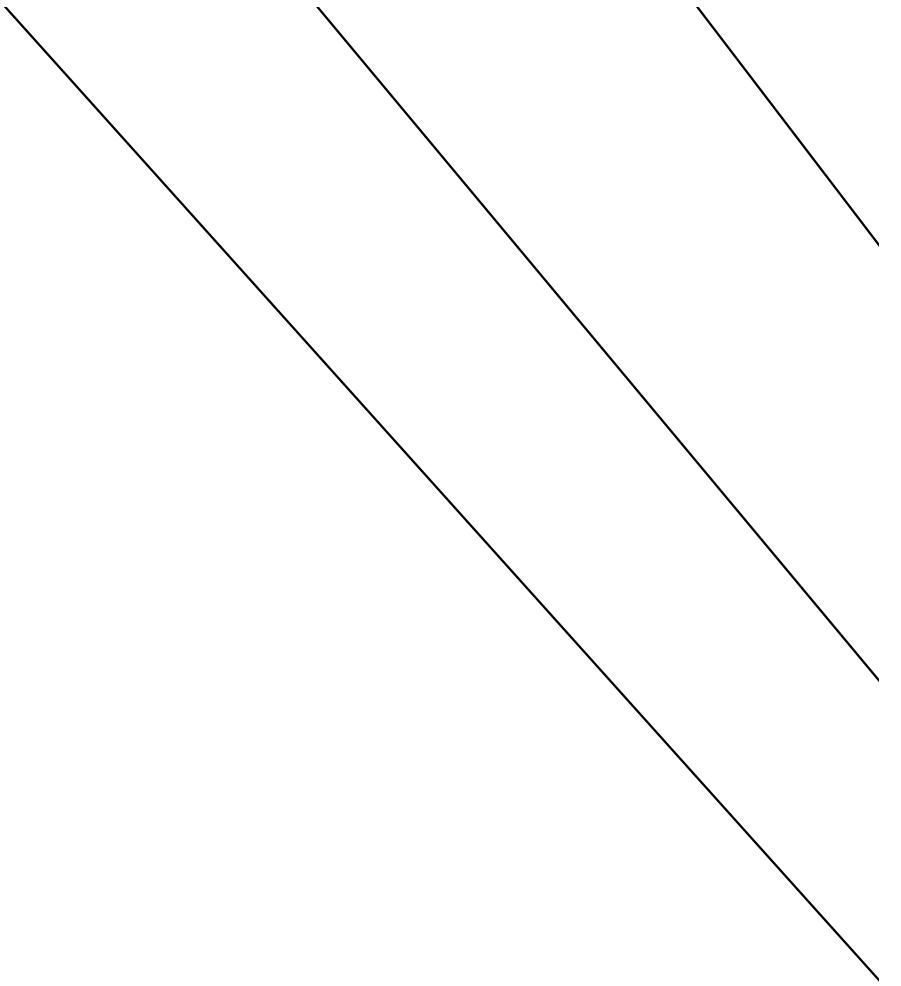


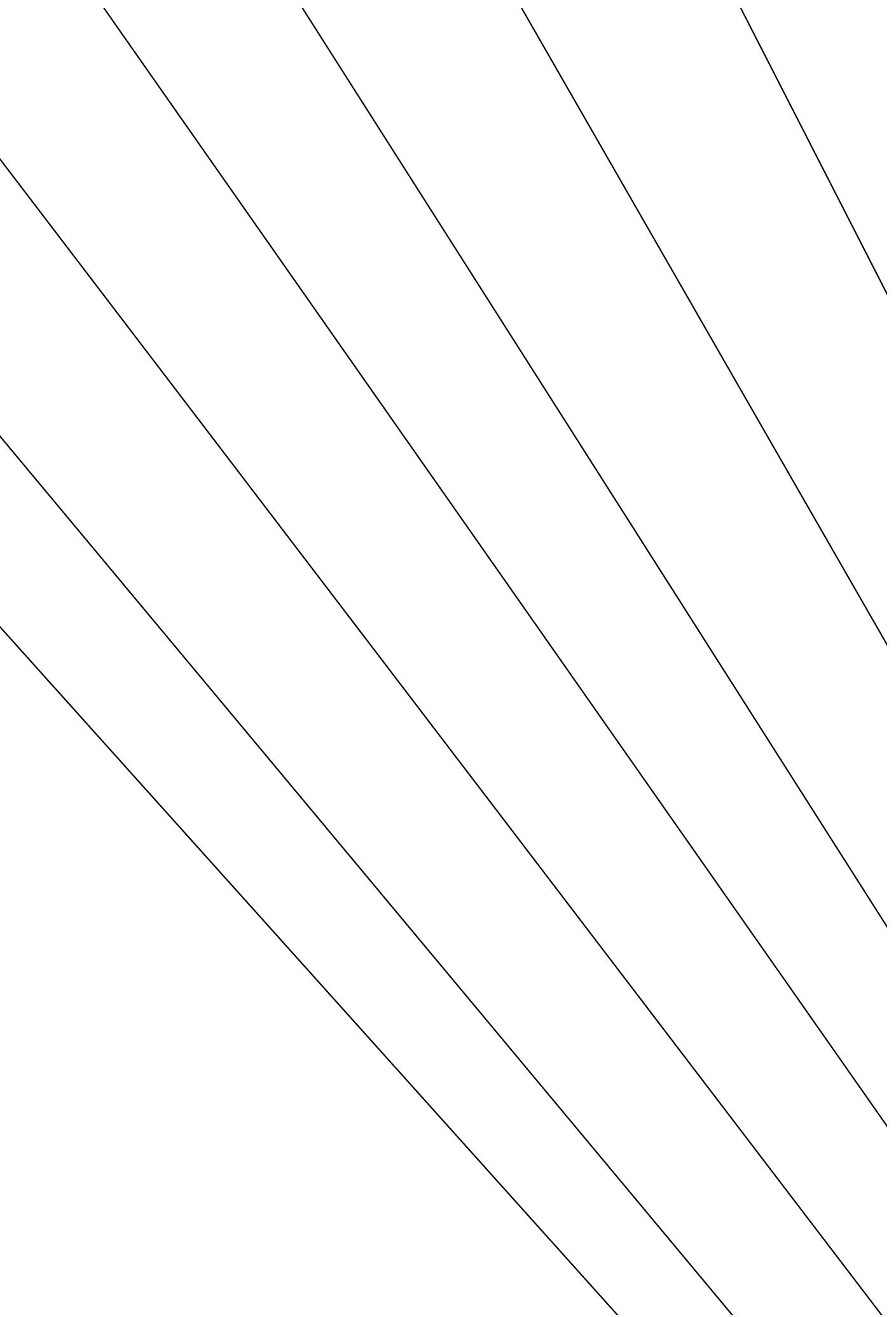


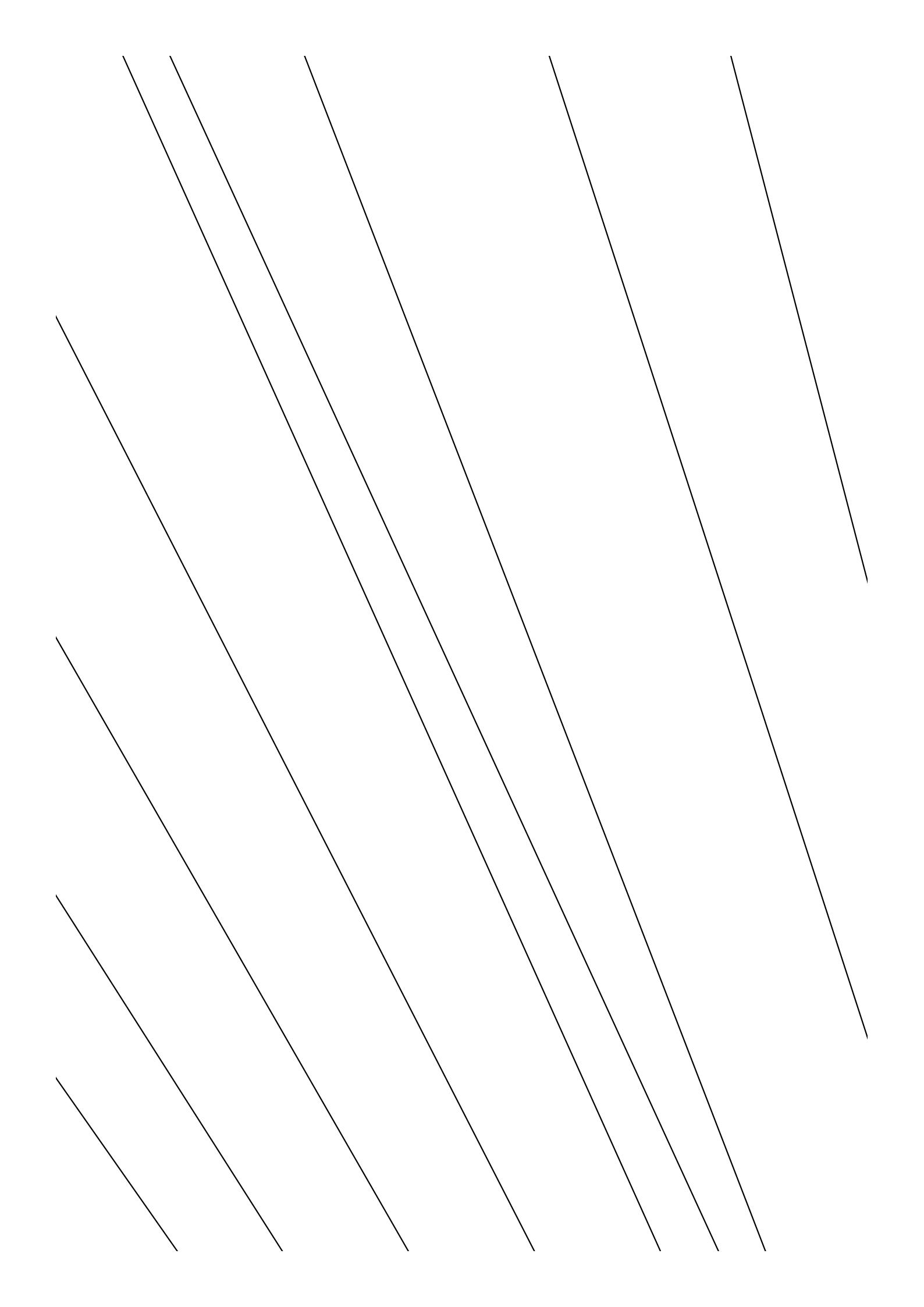




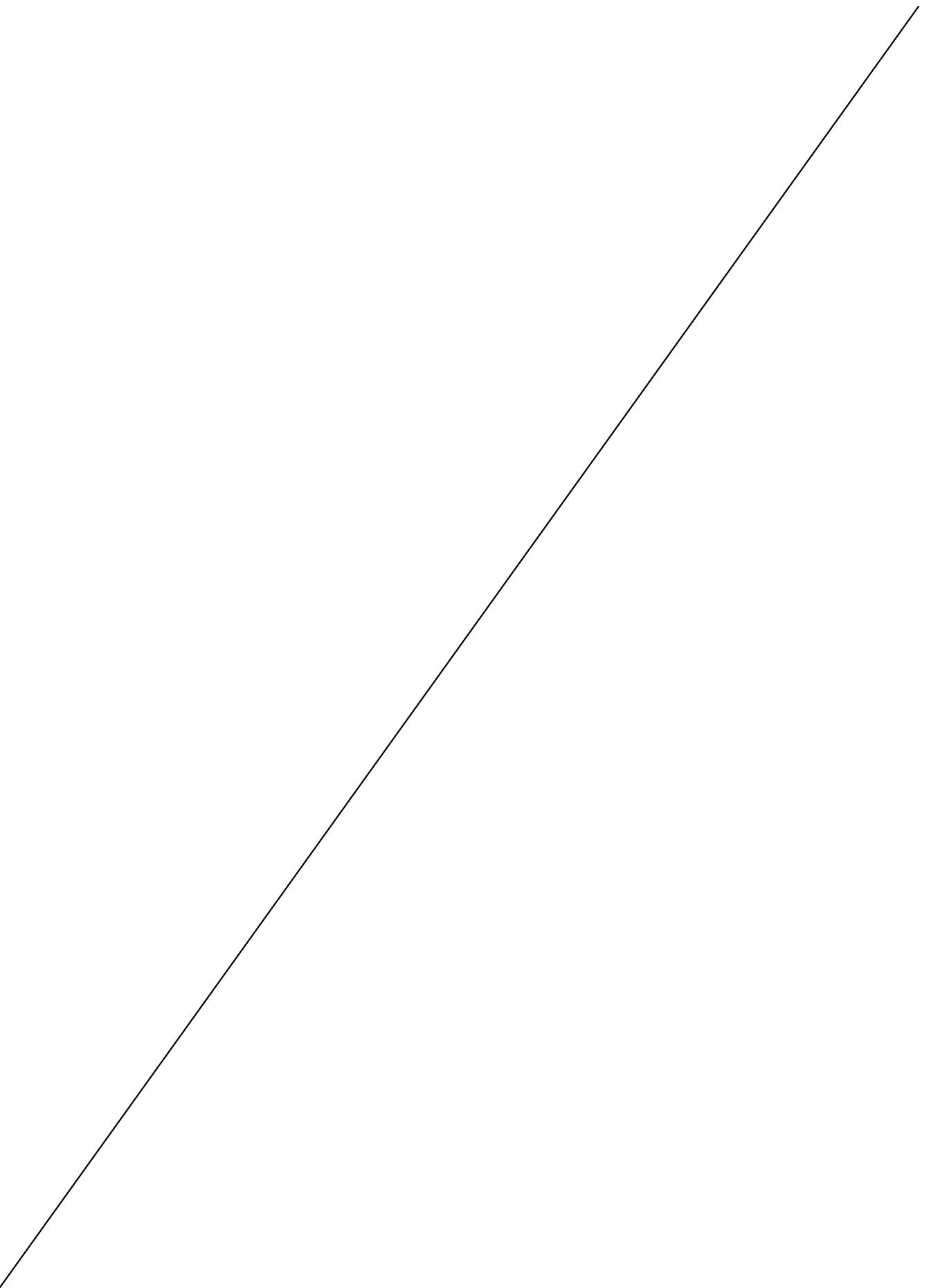


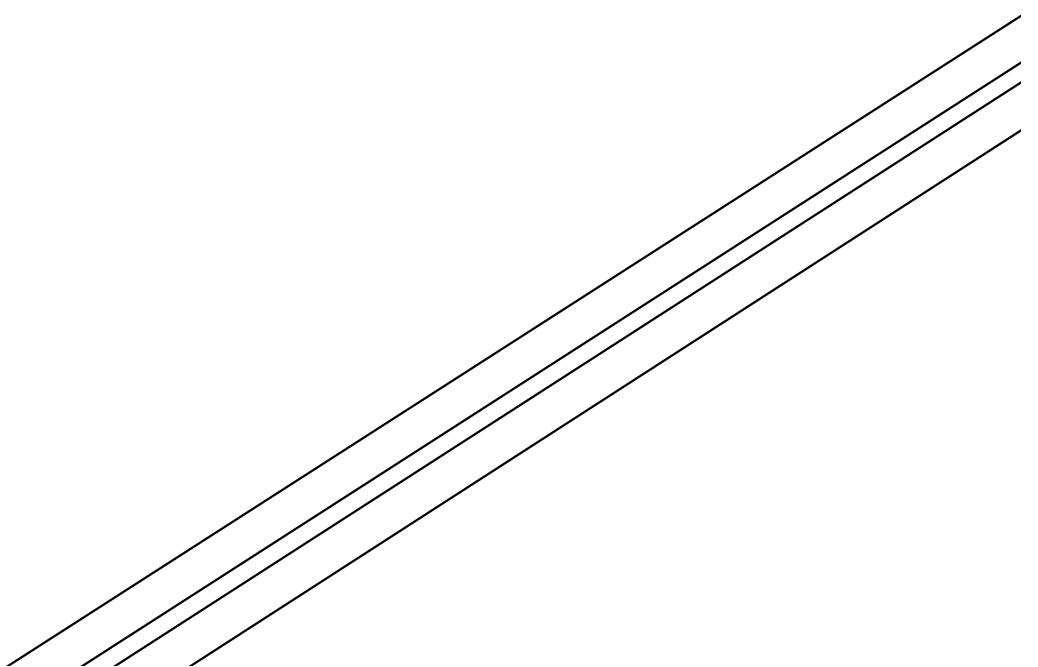


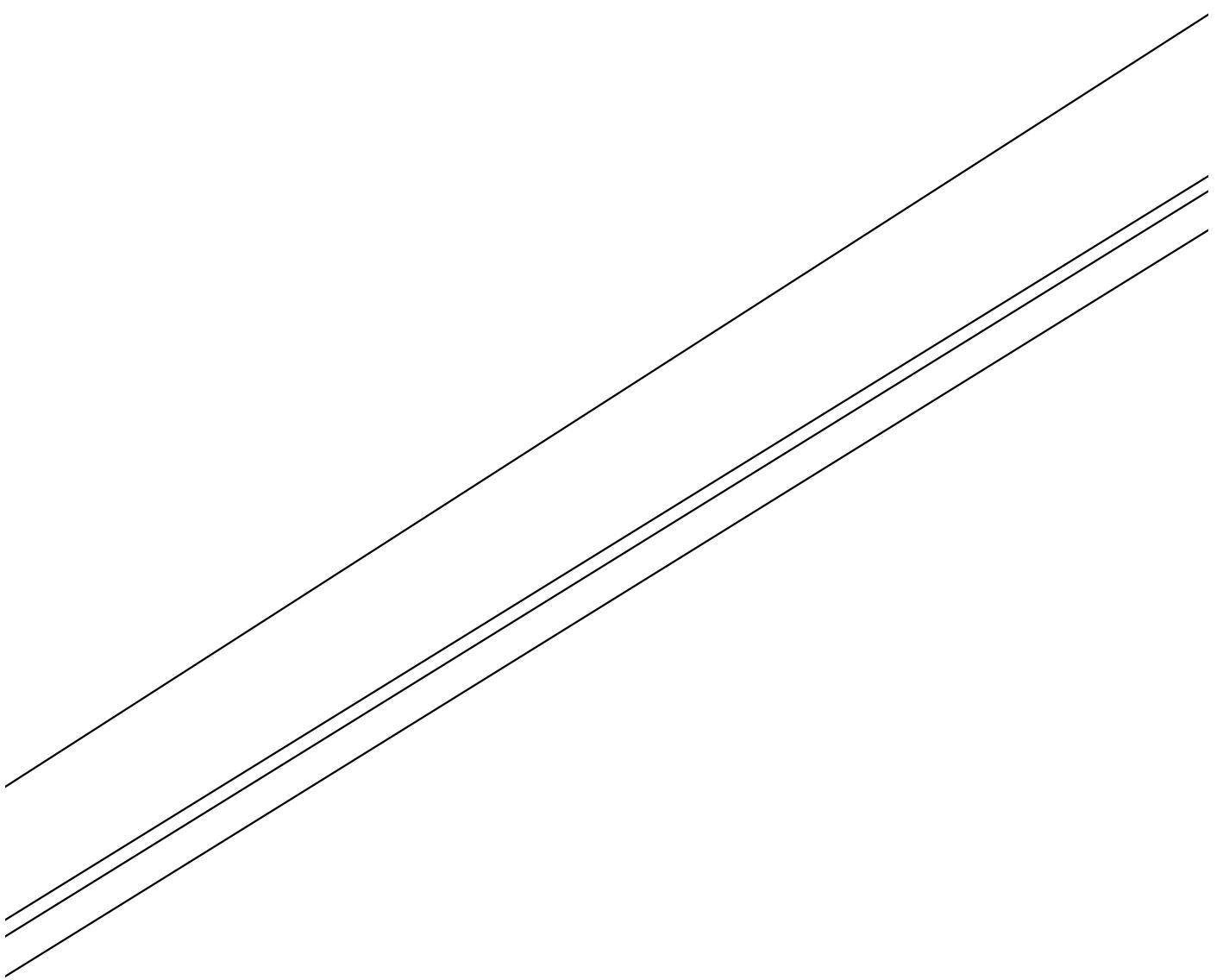


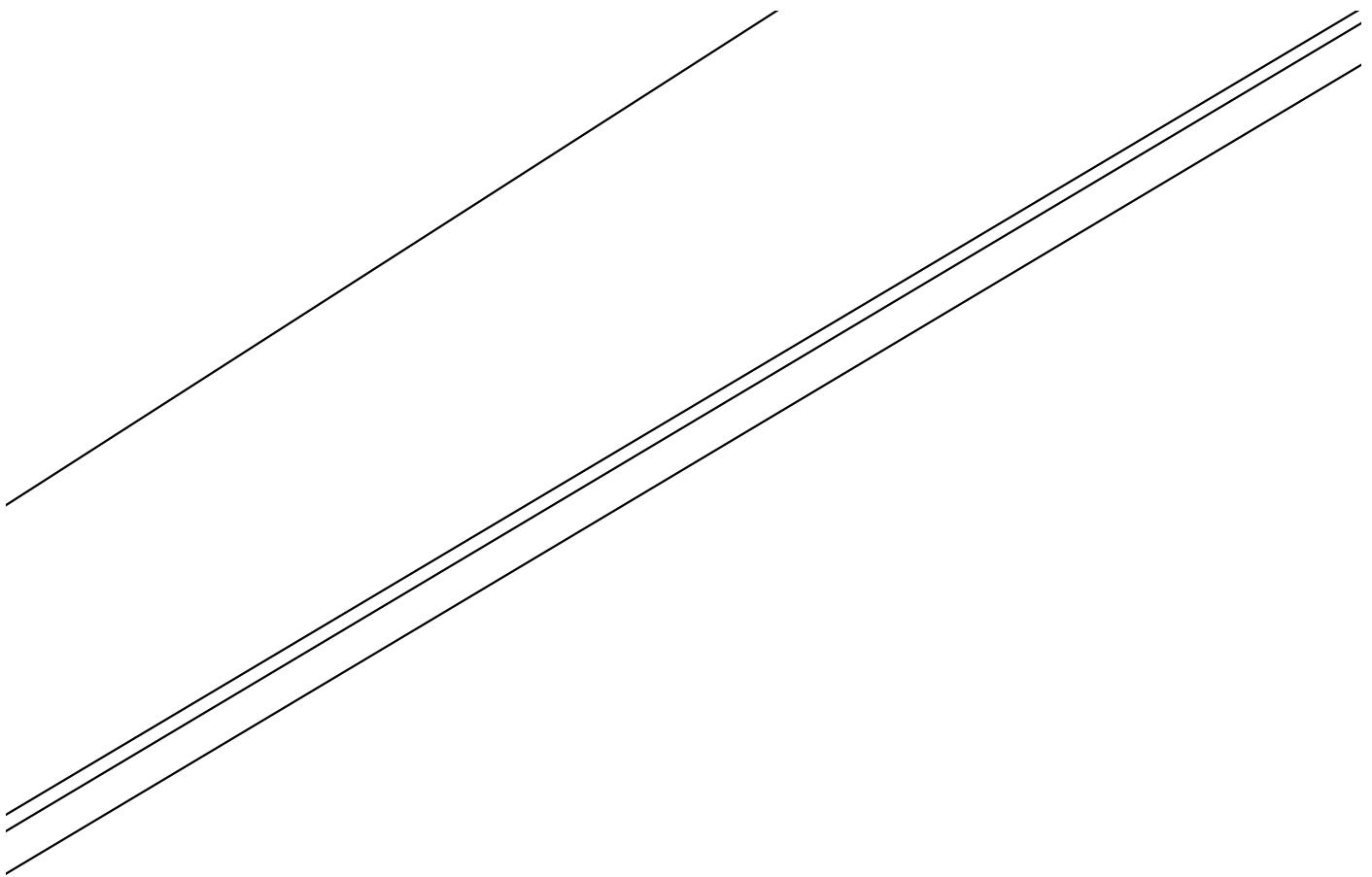


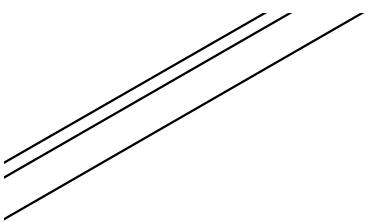
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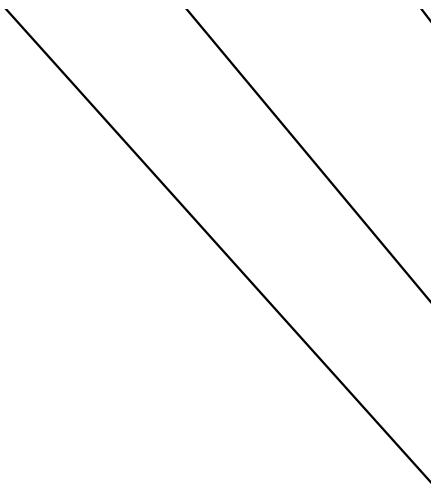


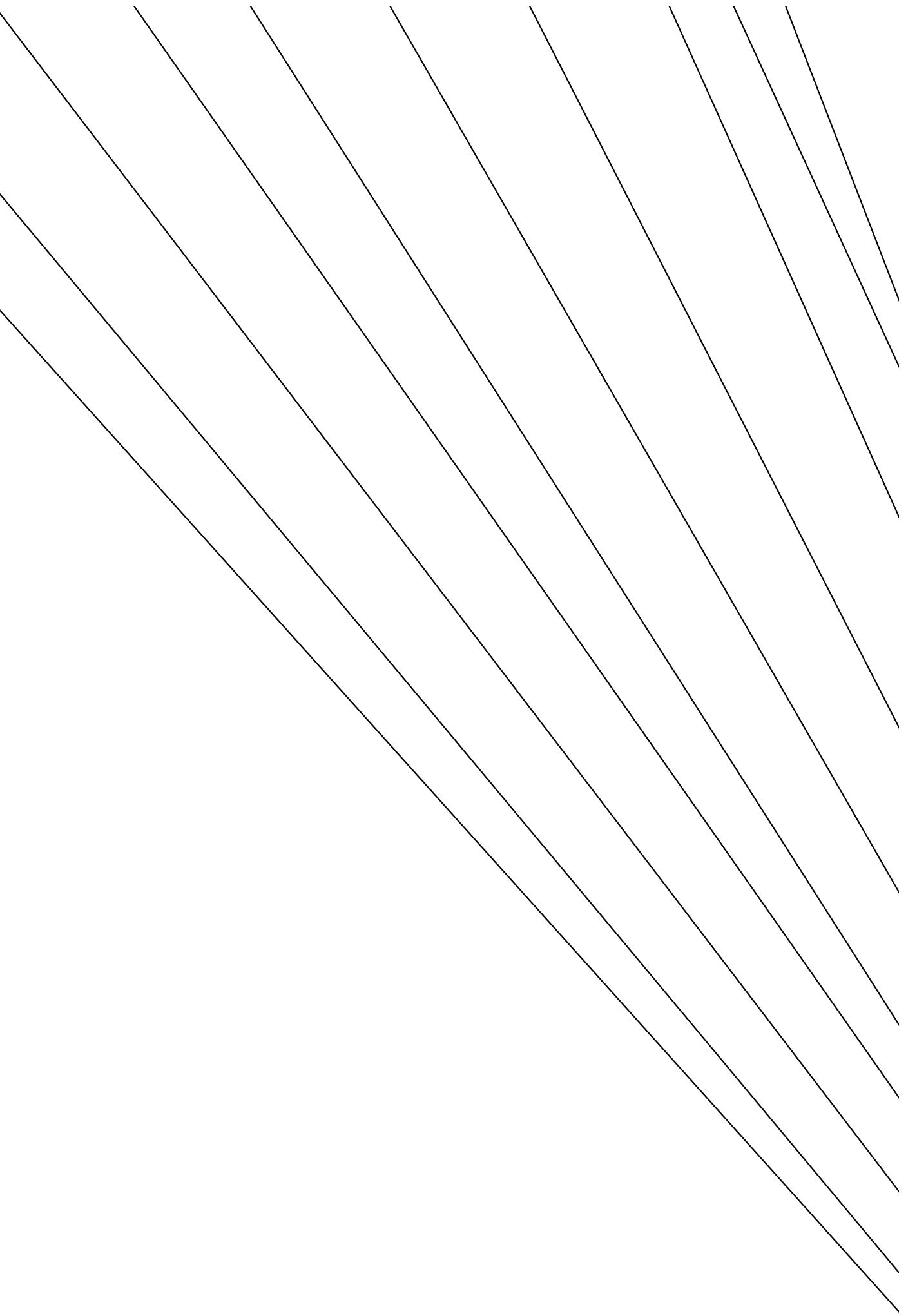


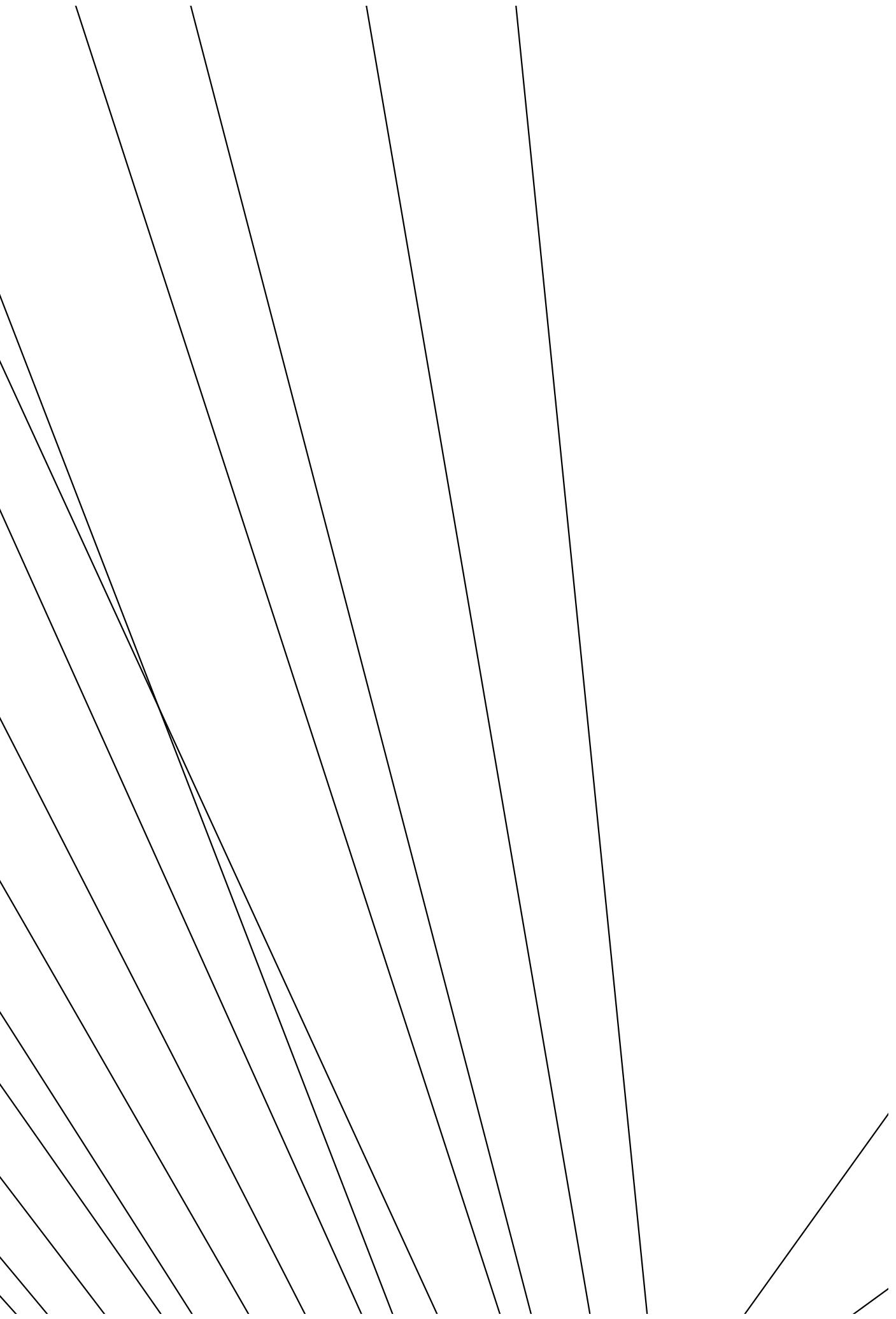


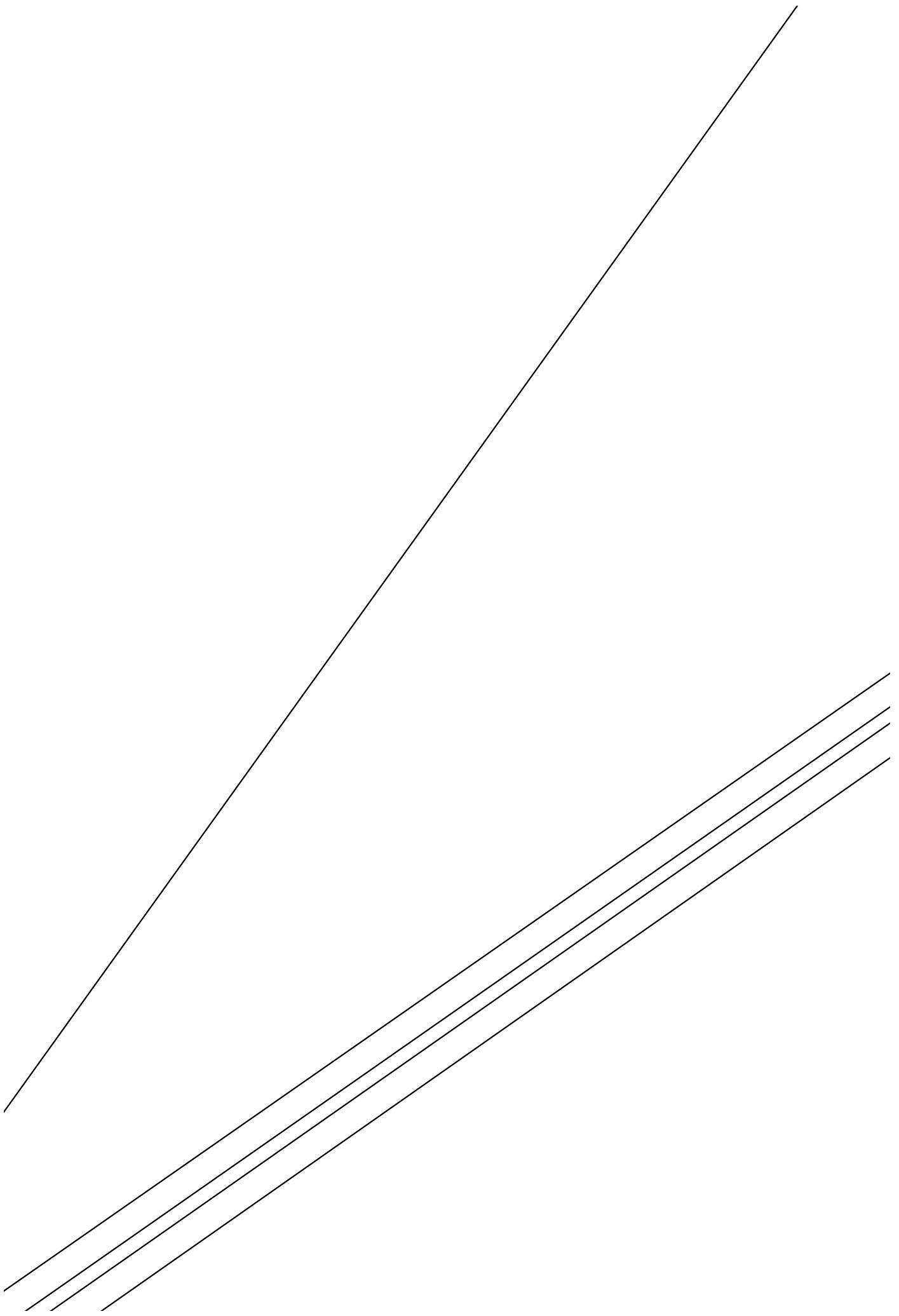


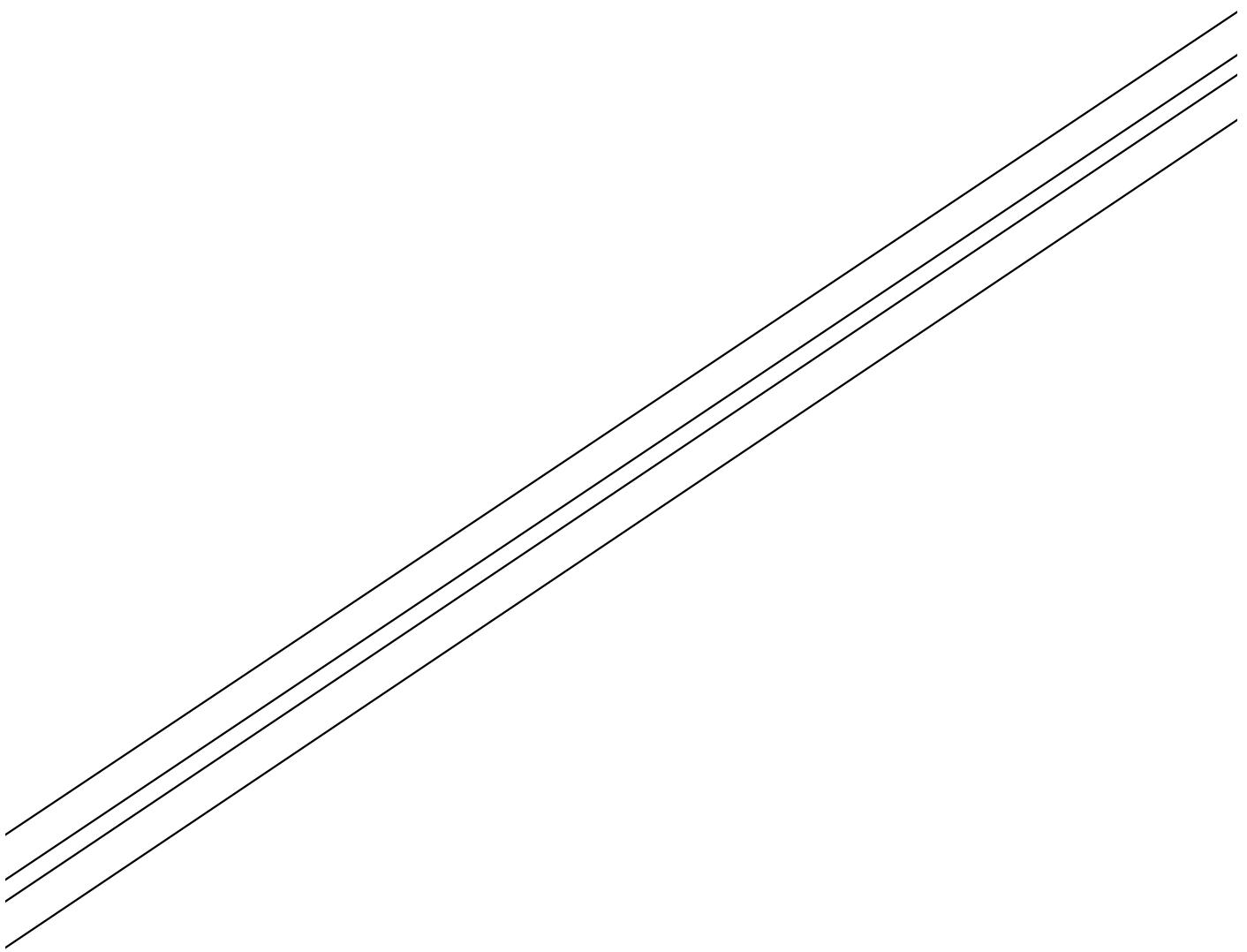


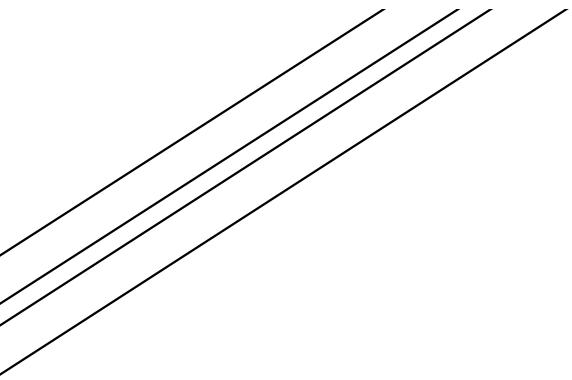


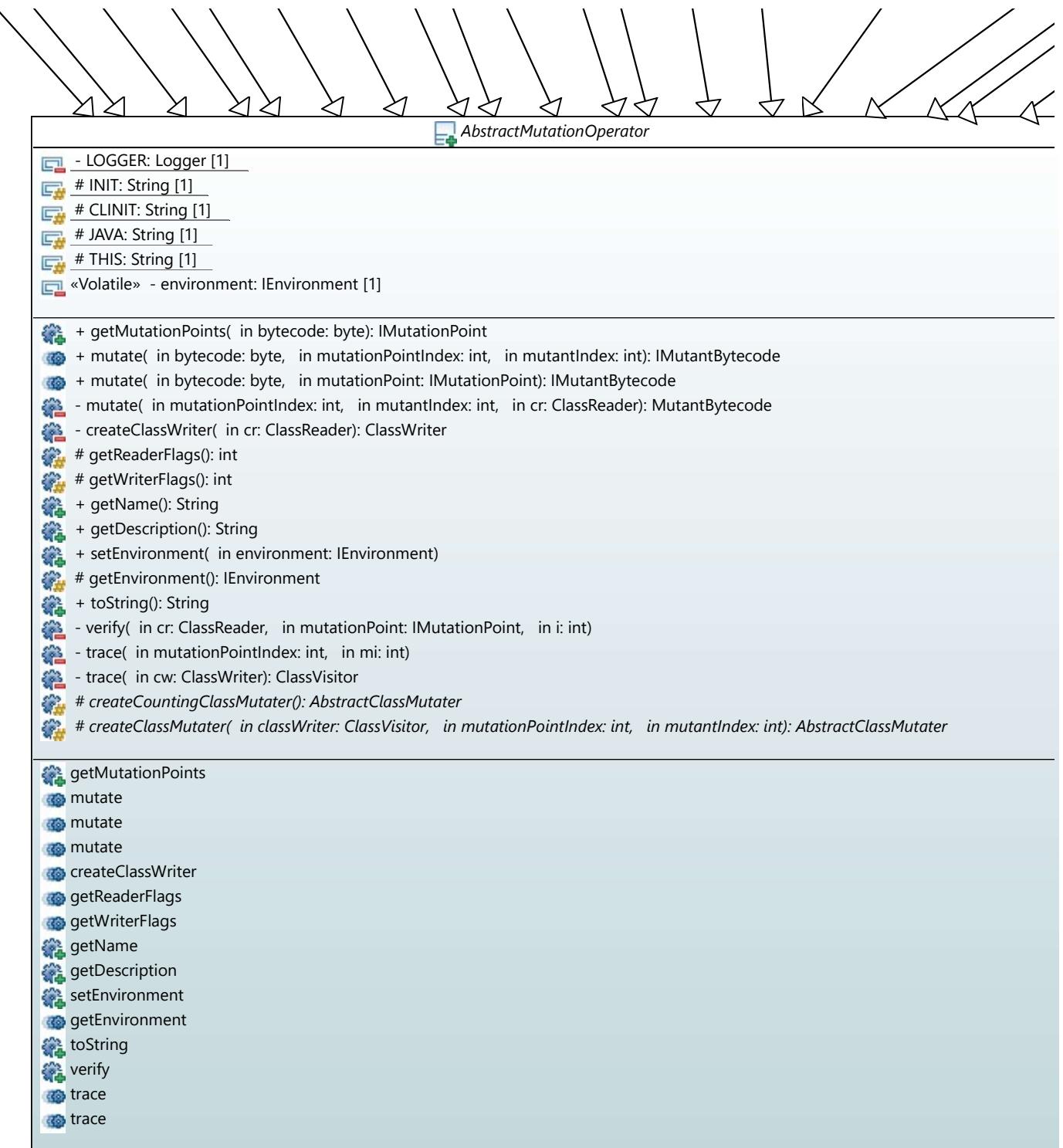


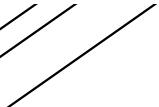












 CLINIT

AbstractMutationOperator implements IMutationOperator



«Interface»

 IMutationOperator

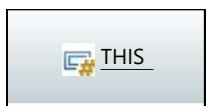
-  - getMutationPoints(in bytecode: byte): IMutationPoint
-  - mutate(in bytecode: byte, in mutationPoint: IMutationPoint): IMutantBytecode
-  - mutate(in bytecode: byte, in mutationPointIndex: int, in mutantIndex: int): IMutantBytecode



getName



↓



THIS

