



# Oracle

**1Z0-819 Exam**

**Java SE 11 Developer**

# Product Questions: 214

## Version: 5.0

---

### Question: 1

Given:

```
public class A {  
    private boolean checkValue(int val) {  
        return true;  
    }  
}
```

and

```
public class B extends A {  
    public int modifyVal(int val) {  
        if(checkValue(val)) {  
            return val;  
        } else {  
            return 0;  
        }  
    }  
    public static void Main(String[] args) {  
        B b = new B();  
        System.out.println(b.modifyVal(10));  
    }  
}
```

What is the result?

- A. nothing
- B. It fails to compile.
- C. 0

- D. A java.lang.IllegalArgumentException is thrown.
- E. 10

---

**Answer: B**

---

```
1- public class A {  
2-     private boolean checkValue(int val) {  
3-         return true;  
4-     }  
5- }  
6- and  
7- public class B extends A {  
8-     public int modifyVal(int val) {  
9-         if(checkValue(val)) {  
10-             return val;  
11-         } else {  
12-             return 0;  
13-         }  
14-     }  
15-     public static void Main(String[] args) {  
16-         B b = new B();  
17-         system.out.println(b.modfiyVal (10));  
18-     }  
19- }
```

**Execute Mode, Version, Inputs & Arguments**

JDK 11.0.4

**CommandLine Arguments****Result**

CPU Time: sec(s), Memory: kilobyte(s)

```
/A.java:6: error: class, interface, or enum expected  
and  
^  
1 error
```

---

**Question: 2**

Given:

```
public interface API {    //line 1
    public void checkValue(Object value)
        throws IllegalArgumentException; //line 2
    public boolean isValueANumber(Object val) {
        if(val instanceof Number) {
            return true;
        }else {
            try {
                Double.parseDouble(val.toString());
                return true;
            }catch (NumberFormatException ex) {
                return false;
            }
        }
    }
}
```

Which two changes need to be made to make this class compile? (Choose two.)

- A. Change Line 1 to an abstract class:public abstract class API {
- B. Change Line 2 access modifier to protected:protected void checkValue(Object value)throws IllegalArgumentException;
- C. Change Line 1 to a class:public class API {
- D. Change Line 1 to extend java.lang.AutoCloseable:public interface API extends AutoCloseable {
- E. Change Line 2 to an abstract method:public abstract void checkValue(Object value)throws IllegalArgumentException;

---

**Answer: C,E**

NE

---

**Question: 3**

Which two modules include APIs in the Java SE Specification? (Choose two.)

- A. java.logging
- B. java.desktop
- C. javafx
- D. jdk.httpserver
- E. jdk.jartool

---

**Answer: A,D**

---

Reference: <https://docs.oracle.com/javase/9/docs/api/overview-summary.html>

---

**Question: 4**

---

Given:

```
public class Test{
    private int num = 1;
    private int div = 0;

    public void divide() {
        try {
            num = num / div;
            System.out.print("Exception");
        }
        catch(ArithmaticException ae) { num = 100; }
        catch(Exception e) { num = 200; }
        finally { num = 300; }
        System.out.print(num);
    }
    public static void main(String args[])
    {
        Test test = new Test();
        test.divide();
    }
}
```

What is the output?

- A. 300
- B. Exception
- C. 200
- D. 100

---

**Answer: A**

---

```
1- public class Test{
2      private int num = 1;
3      private int div = 0;
4
5-     public void divide() {
6-         try {
7             num = num / div;
8             System.out.print("Exception");
9         }
10        catch(ArithmaticException ae) { num = 100; }
11        catch(Exception e) { num = 200; }
12        finally { num = 300; }
13        System.out.print(num);
14    }
15    public static void main(String args[])
16    {
17        Test test = new Test();
18        test.divide();
19    }
20 }
```

Execute Mode, Version, Inputs & Arguments

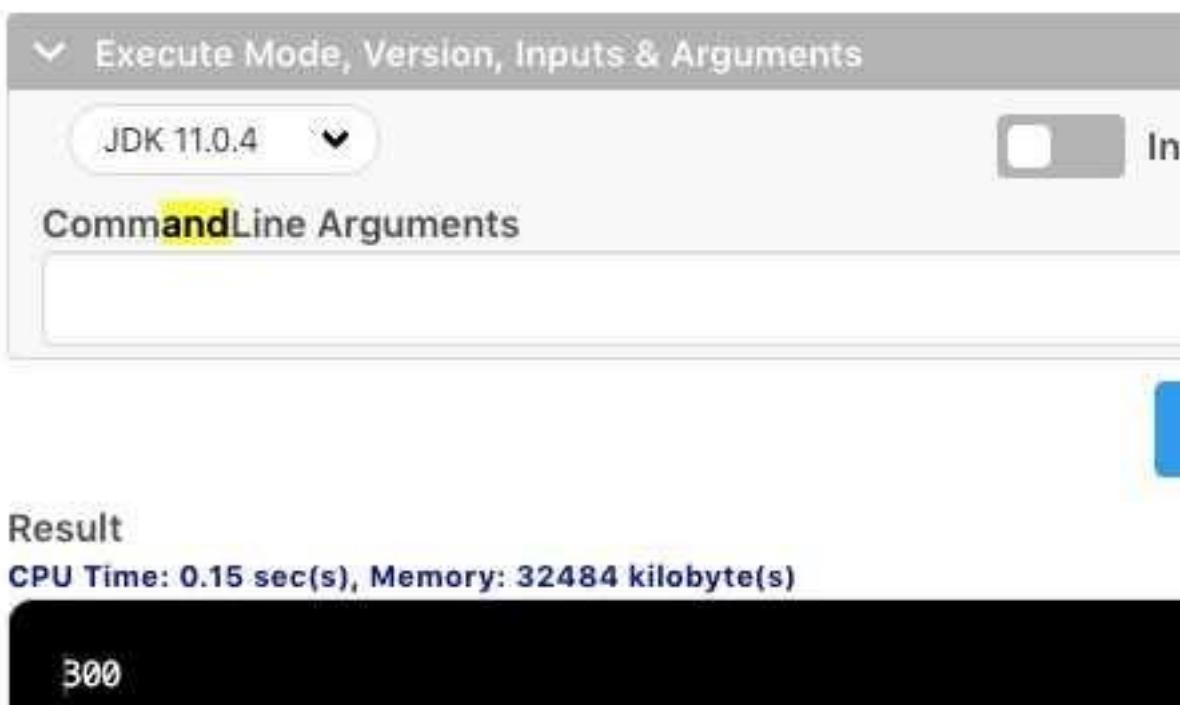
JDK 11.0.4

CommandLine Arguments

Result

CPU Time: 0.15 sec(s), Memory: 32484 kilobyte(s)

300

A screenshot of an IDE interface. At the top, there's a dropdown menu for 'Execute Mode, Version, Inputs & Arguments' set to 'JDK 11.0.4'. Below it is a 'CommandLine Arguments' input field which is empty. The main area shows Java code in a code editor with line numbers. The code defines a 'divide()' method that handles division by zero and prints 'Exception'. It also has a 'main()' method that creates an instance of 'Test' and calls 'divide()'. The output window at the bottom shows the result of the execution: 'CPU Time: 0.15 sec(s), Memory: 32484 kilobyte(s)' followed by the printed value '300'.

---

**Question: 5**

---

Which two statements are true about the modular JDK? (Choose two.)

- A. The foundational APIs of the Java SE Platform are found in the java.base module.
- B. An application must be structured as modules in order to run on the modular JDK.
- C. It is possible but undesirable to configure modules' exports from the command line.
- D. APIs are deprecated more aggressively because the JDK has been modularized.

---

**Answer: A, C**

---



---

**Question: 6** Given the

code fragment:

```
int[] secA = { 2, 4, 6, 8, 10 };
int[] secB = { 2, 4, 8, 6, 10 };
int res1 = Arrays.mismatch(secA, secB);
int res2 = Arrays.compare(secA, secB);
System.out.print(res1 + " : " + res2);
```

What is the result?

- A. -1 : 2
- B. 2 : -1
- C. 2 : 3
- D. 3 : 0

---

**Answer: B**

---

---

**Question: 7**

---

Given:

```
import java.io.*;
public class Tester {
    public static void main(String[] args) {
        try {
            doA();
            doB();
        } catch(IOException e) {
            System.out.print("c");
            return;
        } finally{
            System.out.print("d");
        }
        System.out.print("f");
    }
    private static void doA() {
        System.out.print("a");
        if (false)
            throw new IndexOutOfBoundsException();
    }
    private static void doB() throws FileNotFoundException {
        System.out.print("b");
        if (true)
            throw new FileNotFoundException();
    }
}
```

What is the result?

- A. The compilation fails.
- B. abdf
- C. abd
- D. adf
- E. abcd

---

**Answer: E**

---

**Question: 8**

Which set of commands is necessary to create and run a custom runtime image from Java source files?

- A. java, jdeps
- B. javac, jlink
- C. jar, jlink
- D. javac, jar

---

**Answer: B**

---

Reference: <https://blogs.oracle.com/jtc/automating-the-creation-of-jdk9-reduced-runtime-imagesin-netbeans>

---

**Question: 9**

---

Given:

```
public class Tester {  
    public static void main(String[] args) {  
        StringBuilder sb = new StringBuilder(5);  
        sb.append("HOWDY");  
        sb.insert(0, ' ');  
        sb.replace(3, 5, "LL");  
        sb.insert(6, "COW");  
        sb.delete(2, 7);  
        System.out.println(sb.length());  
    }  
}
```

What is the result?

- A. 4
- B. 3
- C. An exception is thrown at runtime.
- D. 5

---

**Answer: D**

---

```
6 public class Tester {  
7     public static void main(String[] args) {  
8         StringBuilder sb = new StringBuilder (5);  
9         sb.append ("HOWDY");  
10        sb.insert (0, ' ');  
11        sb.replace(3, 5, "LL");  
12        sb.insert (6, "COW");  
13        sb.delete(2, 7);  
14        System.out.println(sb.length());  
15    }  
16 }
```

(command line arguments)

Successfully compiled /tmp/java\_B2Tian/Tester.java &lt;-- main method

5

---

**Question: 10**

---

Given:

```
import java.util.function.BiFunction;  
public class Pair<T> {  
    final BiFunction<T, T, Boolean> validator;  
    T left = null;  
    T right = null;  
    private Pair() {  
        validator=null;  
    }  
    Pair(BiFunction<T, T, Boolean> v, T x, T y) {  
        validator = v;  
        set(x, y);  
    }  
    void set(T x, T y) {  
        if (!validator.apply(x, y)) throw new IllegalArgumentException();  
        setLeft(x);  
        setRight(y);  
    }  
    void setLeft(T x) {  
        left = x;  
    }  
    void setRight(T y) {  
        right = y;  
    }  
    final boolean isValid() {  
        return validator.apply(left, right);  
    }  
}
```

It is required that if p instanceof Pair then p.isValid() returns true.  
Which is the smallest set of visibility changes to insure this requirement is met?

- A. setLeft and setRight must be protected.
- B. left and right must be private.
- C. isValid must be public.
- D. left, right, setLeft, and setRight must be private.

---

**Answer: B**

**Question: 11**

---

Given:

```
var i = 10;  
var j = 5;  
i += (j * 5 + j) / i - 2;  
System.out.println(i);
```

What is the result?

- A. 5
- B. 3
- C. 23
- D. 25
- E. 11

---

**Answer: E**

**Question: 12**

---

Given:

```
public class Tester {  
    private int x;  
    private static int y;  
    public static void main(String[] args) {  
        Tester t1 = new Tester();  
        t1.x = 2;  
        Tester.y = 3;  
        Tester t2 = new Tester();  
        t2.x = 4;  
        t2.y = 5;  
        System.out.println(t1.x+", "+t1.y);  
        System.out.println(t2.x+", "+Tester.y);  
        System.out.println(t2.x+", "+t1.y);  
    }  
}
```

What is the result?

- A. 2,34,34,5
- B. 2,34,54,5
- C. 2,54,54,5
- D. 2,34,54,3

---

**Answer: C**

---

DE

DOWNLOAD ZIP

default

2,5  
4,5  
4,5

---

**Question: 13**

Given:

```
public interface EulerInterface {  
    double getEulerValue();  
}  
  
public class EulerLambda {  
    public static void main(String[] args) {  
        EulerInterface myEulerInterface;  
        myEulerInterface = () -> "2.71828";  
        System.out.println("Value of Euler = " + myEulerInterface.getEulerValue());  
    }  
}
```

What is the result?

- A. It throws a runtime exception.
- B. Value of Euler = 2.71828
- C. The code does not compile.
- D. Value of Euler = "2.71828"

---

**Answer: C**

---

**Question: 14**

Given:

```
class Myclass {  
    public static void main(String [] args) {  
        System.out.println(arg[1] + "--" + arg[3] + "--" + arg[0]);  
    }  
}
```

executed using this command:

java Myclass My Car is red

What is the output of this class?

- A. Car--red--My
- B. My--Car--is
- C. My--is--java
- D. java--Myclass--My
- E. Myclass--Car--red

---

**Answer: A**

**Question: 15**

Given:

```
package b;  
public class Person {  
    protected Person() { //line 1  
    }  
}
```

and

```
package a;  
import b.Person;  
public class Main { //line 2  
    public static void main(String[] args) {  
        Person person = new Person(); //line 3  
    }  
}
```

Which two allow a.Main to allocate a new Person? (Choose two.)

- A. In Line 1, change the access modifier to privateprivate Person() {
- B. In Line 1, change the access modifier to publicpublic Person() {
- C. In Line 2, add extends Person to the Main classpublic class Main extends Person {and change Line 3 to create a new Main objectPerson person = new Main();
- D. In Line 2, change the access modifier to protectedprotected class Main {
- E. In Line 1, remove the access modifierPerson() {

---

**Answer: BC**

---

**Question: 16**

Given:

```
1. {
2.     Iterator iter = List.of(1,2,3).iterator();
3.     while (iter.hasNext()) {
4.         foo(iter.next());
5.     }
6.     Iterator iter2 = List.of(1,2,3).iterator();
7.     while (iter.hasNext()) {
8.         bar(iter2.next());
9.     }
10. }
11. for (Iterator iter = List.of(1,2,3).iterator(); iter.hasNext(); ) {
12.     foo(iter.next());
13. }
14. for (Iterator iter2 = List.of(1,2,3).iterator(); iter.hasNext(); ) {
15.     bar(iter2.next());
16. }
```

Which loop incurs a compile time error?

- A. the loop starting line 11
- B. the loop starting line 7
- C. the loop starting line 14
- D. the loop starting line 3

---

**Answer: C**

---

**Question: 17**

Which two statements are true about Java modules? (Choose two.)

- A. Modular jars loaded from --module-path are automatic modules.
- B. Any named module can directly access all classes in an automatic module.
- C. Classes found in –classpath are part of an unnamed module.
- D. Modular jars loaded from –classpath are automatic modules.
- E. If a package is defined in both the named module and the unnamed module, then the package in the unnamed module is ignored.

---

**Answer: A,C**

Reference: <http://tutorials.jenkov.com/java/modules.html>

---

**Question: 18**

Given:

```
public class DNASynth {  
    int aCount;  
    int tCount;  
    int cCount;  
    int gCount;  
  
    DNASynth(int a, int tCount, int c, int g) {  
        // line 1  
    }  
    int setCCount(int c) {  
        return c;  
    }  
    void setGCount(int gCount) {  
        this.gCount = gCount;  
    }  
}
```

Which two lines of code when inserted in line 1 correctly modifies instance variables? (Choose two.)

- A. setCCount(c) = cCount;
- B. tCount = tCount;
- C. setGCount(g);
- D. cCount = setCCount(c);
- E. aCount = a;

---

**Answer: B,E**

 **Question: 19**

Given:

```
class Mycar {  
}
```

and

```
javac C:\workspace4\Mycar.java
```

What is the expected result of javac?

- A. javac fails to compile the class and prints the error message, C:\workspace4\Mycar.java:1:error: package java does not exist
- B. javac compiles Mycar.java without errors or warnings.
- C. javac fails to compile the class and prints the error message, C:\workspace4\Mycar.java:1:error: expected import java.lang
- D. javac fails to compile the class and prints the error message, Error: Could not find or load main class Mycar.class

---

**Answer: B**

 **Question: 20**

Given:

```
1. interface Pastry {  
2.     void getIngredients();  
3. }  
4. abstract class Cookie implements Pastry {}  
5.  
6. class ChocolateCookie implements Cookie {  
7.     public void getIngredients() {}  
8. }  
9. class CoconutChocolateCookie extends ChocolateCookie {  
10.    void getIngredients(int x) {}  
11. }
```

Which is true?

- A. The compilation fails due to an error in line 6.
- B. The compilation succeeds.
- C. The compilation fails due to an error in line 4.

- D. The compilation fails due to an error in line 10.
- E. The compilation fails due to an error in line 7.
- F. The compilation fails due to an error in line 9.
- G. The compilation fails due to an error in line 2.

---

**Answer: A**

**Question: 21**

---

Given:

```
StringBuilder s = new StringBuilder("ABCD");
```

Which would cause s to be AQCD?

- A. s.replace(s.indexOf("A"), s.indexOf("C"), "Q");
- B. s.replace(s.indexOf("B"), s.indexOf("C"), "Q");
- C. s.replace(s.indexOf("B"), s.indexOf("B"), "Q");
- D. s.replace(s.indexOf("A"), s.indexOf("B"), "Q");

---

**Answer: B**

**Question: 22**

---

Given:

```
class Employee {  
    String office;  
}
```

and the code fragment:

```
5. public class HRApp {  
6.     var employee = new ArrayList<Employee>();  
7.     public var display() {  
8.         var employee = new Employee();  
9.         var offices = new ArrayList<>();  
10.        offices.add("Chicago");  
11.        offices.add("Bangalore");  
12.        for (var office : offices) {  
13.            System.out.print("Employee Location"+ office);  
14.        }  
15.    }  
16. }
```

Which two lines cause compilation errors? (Choose two.)

- A. line 12
- B. line 6
- C. line 9
- D. line 8 E. line 7

---

**Answer: B,E**

---

### **Question: 23**

Which describes a characteristic of setting up the Java development environment?

- A. Setting up the Java development environment requires that you also install the JRE.
- B. The Java development environment is set up for all operating systems by default.
- C. You set up the Java development environment for a specific operating system when you install the JDK.
- D. Setting up the Java development environment occurs when you install an IDE before the JDK.

---

**Answer: D**

---

Reference: <https://docs.oracle.com/javame/8.1/sdk-dev-guide/install.htm>

Question: 24

Given:

```
package test.t1;
public class A {
    public int x = 42;
    protected A() {}                                // line 1
}
```

and

```
package test.t2;
import test.t1.*;
public class B extends A {
    int x = 17;                                     // line 2
    public B() { super(); }                          // line 3
}
```

and

```
package test;
import test.t1.*;
import test.t2.*;
public class Tester {
    public static void main(String[] args) {
        A obj = new B();                           // line 4
        System.out.println(obj.x); // line 5
    }
}
```

What is the result?

A. 42

- B. The compilation fails due to an error in line 4.
- C. 17
- D. The compilation fails due to an error in line 3.
- E. The compilation fails due to an error in line 2.
- F. The compilation fails due to an error in line 1.
- G. The compilation fails due to an error in line 5.

---

**Answer: A**

**Question: 25**

---

Given:

```
public class Foo {  
    public <T> Collection<T> foo(Collection<T> arg) { ... }  
}
```

and

```
public class Bar extends Foo { ... }
```

Which two statements are true if the method is added to Bar? (Choose two.)

- A. public Collection<String> foo(Collection<String> arg) { ... } overrides Foo.foo.
- B. public <T> Collection<T> foo(Stream<T> arg) { ... } overloads Foo.foo.
- C. public <T> List<T> foo(Collection<T> arg) { ... } overrides Foo.foo.
- D. public <T> Collection<T> foo(Collection<T> arg) { ... } overloads Foo.foo.
- E. public <T> Collection<T> bar(Collection<T> arg) { ... } overloads Foo.foo.
- F. public <T> Iterable<T> foo(Collection<T> arg) { ... } overrides Foo.foo.

---

**Answer: C,F**

**Question: 26**

---

Given the code fragment:

```
char[][] arrays = {{'a', 'd'}, {'b', 'e'}, {'c', 'f'}};  
for (char[] xx : arrays) {  
    for (char yy : xx) {  
        System.out.print(yy);  
    }  
    System.out.print(" ");  
}
```

What is the result?

- A. ab cd ef
- B. An ArrayIndexOutOfBoundsException is thrown at runtime.
- C. The compilation fails.
- D. abc def
- E. ad be cf

---

**Answer: E**

**Question: 27**

Given:

```
public class Hello {  
    public static void main(String[] args) {  
        System.out.println(args[0]+args[1]+args[2]);  
    }  
}
```

executed using command:

java Hello "Hello World" Hello World

What is the output?

- A. An exception is thrown at runtime.
- B. Hello WorldHello World
- C. Hello World Hello World
- D. Hello WorldHelloWorld**
- E. HelloHello WorldHelloWorld

---

**Answer: C**

Question: 28

Given:

```
public class Test {  
    private String[] strings;  
}
```

Which two constructors will compile and set the class field strings? (Choose two.)

A.

```
public Test(List<String> strings) {  
    this.strings = strings;  
}
```

B.

```
public Test(String... strings) {  
    strings = strings;  
}
```

C.

```
public Test(String... strings) {  
    this.strings = strings;  
}
```

D.

```
public Test(String strings) {  
    strings = strings;  
}
```

E.

```
public Test(String[] strings) {  
    this.strings = strings;  
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D
- E. Option E

---

**Answer: C,E**

---

**Question: 29**

Given the code fragment:

```
String s1 = new String("ORACLE");
String s2 = "ORACLE";
String s3 = s1.intern();

System.out.print((s1==s2) + " ");
System.out.print((s2==s3) + " ");
System.out.println(s1==s3);
```

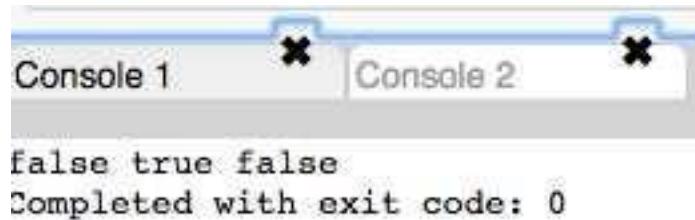
What is the result?

- A. false true true
- B. true false false
- C. false false true
- D. false true false

---

**Answer: D**

---



```
Console 1 ✘ Console 2 ✘
false true false
Completed with exit code: 0
```

**Question: 30**

Given:

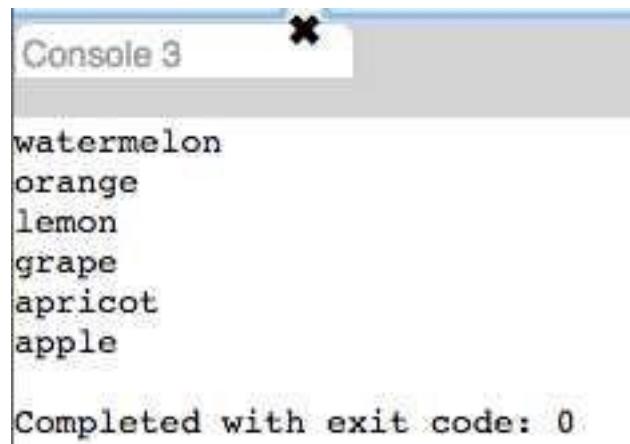
```
import java.util.ArrayList;
import java.util.Arrays;
public class NewMain {
    public static void main(String[] args) {
        String[] fruitNames = { "apple", "orange",
            "grape", "lemon", "apricot", "watermelon" };
        var fruits = new ArrayList<>(Arrays.asList(fruitNames));
        fruits.sort((var a, var b) -> -a.compareTo(b));
        fruits.forEach(System.out::println);
    }
}
```

What is the result?

- A. watermelonorangelemongrapeapricotapple
- B. nothing
- C. appleapricotgrapelemonorangerawatermelon
- D. appleorangegrapelemonapricotwatermelon

---

**Answer: A**



```
Console 3
watermelon
orange
lemon
grape
apricot
apple

Completed with exit code: 0
```

---

**Question: 31**

Given the code fragment:

```
int x = 0;
while(x < 10) {
    System.out.print(x++);
}
```

Which “for” loop produces the same output?

A.

```
int b = 0;
for( ; b < 10; ){
    System.out.print(++b);
}
```

B.

```
for(a; a < 10; a++){
    System.out.print(a);
}
```

C.

```
for(int d = 0; d < 10; ){
    System.out.print(d);
    ++d;
}
```

D.

```
for(int c = 0; ; c++){
    System.out.print(c);
    if(c == 10){
        break;
    }
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

---

**Answer: C**

---

**Question: 32**

Given:

```
public interface InterfaceOne {  
    void printOne();  
}
```

Which three classes successfully override printOne()? (Choose three.)

A.

```
public abstract class TestClass implements InterfaceOne {  
    public abstract void printOne();  
}
```

B.

```
public class TestClass implements InterfaceOne {  
    private void printOne(){  
        System.out.println("one");  
    }  
}
```

C.

```
public class TestClass implements InterfaceOne {  
    public void printOne(){  
        System.out.println("one");  
    }  
}
```

D.

```
public abstract class TestClass implements InterfaceOne {  
    public void printOne(){  
        System.out.println("one");  
    }  
}
```

E.

```
public abstract class TestClass implements InterfaceOne {  
    public String printOne(){  
        return "one";  
    }  
}
```

F.

```
public class TestClass{  
    public void printOne(){  
        System.out.println("one");  
    }  
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D E. Option E
- F. Option F

---

**Answer: ACD**

**Question: 33**

Given:

```
public class Test {  
    public static void main(String[] args) {  
        AnotherClass ac = new AnotherClass();  
        SomeClass sc = new AnotherClass();  
        ac = sc;  
        sc.methodA();  
        ac.methodA();  
    }  
}  
class SomeClass {  
    public void methodA() {  
        System.out.println("SomeClass#methodA()");  
    }  
}  
class AnotherClass extends SomeClass {  
    public void methodA() {  
        System.out.println("AnotherClass#methodA()");  
    }  
}
```

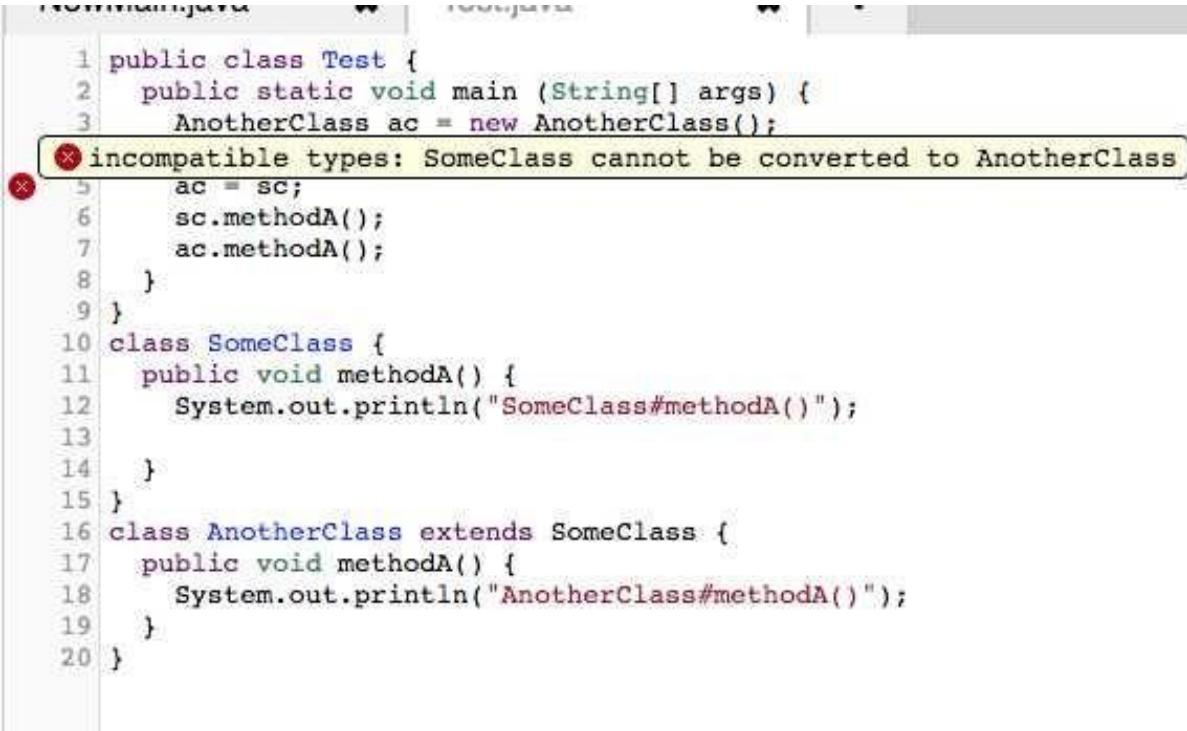
What is the result?

- A. A ClassCastException is thrown at runtime.
- B. AnotherClass#methodA()AnotherClass#methodA()
- C. The compilation fails.
- D. SomeClass#methodA()AnotherClass#methodA()
- E. AnotherClass#methodA()SomeClass#methodA()
- F. SomeClass#methodA()SomeClass#methodA()

---

**Answer: C**

---



A screenshot of a Java code editor showing a compilation error. The code defines a `Test` class with a `main` method. It creates an `AnotherClass` object (`ac`) and attempts to assign it to a `SomeClass` variable (`sc`). This results in a red error message: `incompatible types: SomeClass cannot be converted to AnotherClass`. The code also includes definitions for `SomeClass` and `AnotherClass`, both of which implement the `methodA` method.

```
1 public class Test {
2     public static void main (String[] args) {
3         AnotherClass ac = new AnotherClass();
4         sc = ac;
5         sc.methodA();
6         ac.methodA();
7     }
8 }
9 class SomeClass {
10     public void methodA() {
11         System.out.println("SomeClass#methodA()");
12     }
13 }
14 class AnotherClass extends SomeClass {
15     public void methodA() {
16         System.out.println("AnotherClass#methodA()");
17     }
18 }
19 }
20 }
```

---

**Question: 34**

---

Which two statements are correct about try blocks? (Choose two.)

- A. A try block can have more than one catch block.
- B. A finally block in a try-with-resources statement executes before the resources declared are closed.
- C. A finally block must be immediately placed after the try or catch blocks.
- D. A try block must have a catch block and a finally block.
- E. catch blocks must be ordered from generic to specific exception types.

---

**Answer: A, C**

---

---

**Question: 35**

---

Given:

```
public class Over {  
    public void analyze(Object[] o){  
        System.out.println("I am an object array");  
    }  
    public void analyze(long[] l){  
        System.out.println("I am an array");  
    }  
    public void analyze(Object o){  
        System.out.println("I am an object");  
    }  
    public static void main(String[] args) {  
        int[] nums = new int[10];  
        new Over().analyze(nums); // line 1  
    }  
}
```

What is the output?

- A. I am an object array
- B. The compilation fails due to an error in line 1.
- C. I am an array
- D. I am an object

---

**Answer: D**

---

**Question: 36**

Given:

```

public class Price {
    private final double value;
    public Price(String value) {
        this(Double.parseDouble(value));
    }
    public Price(double value) {
        this.value = value;
    }
    public Price () {}
    public double getValue() { return value; }
    public static void main(String[] args) {
        Price p1 = new Price("1.99");
        Price p2 = new Price(2.99);
        Price p3 = new Price();
        System.out.println(p1.getValue()+" , "+p2.getValue()+" , "+p3.getValue());
    }
}

```

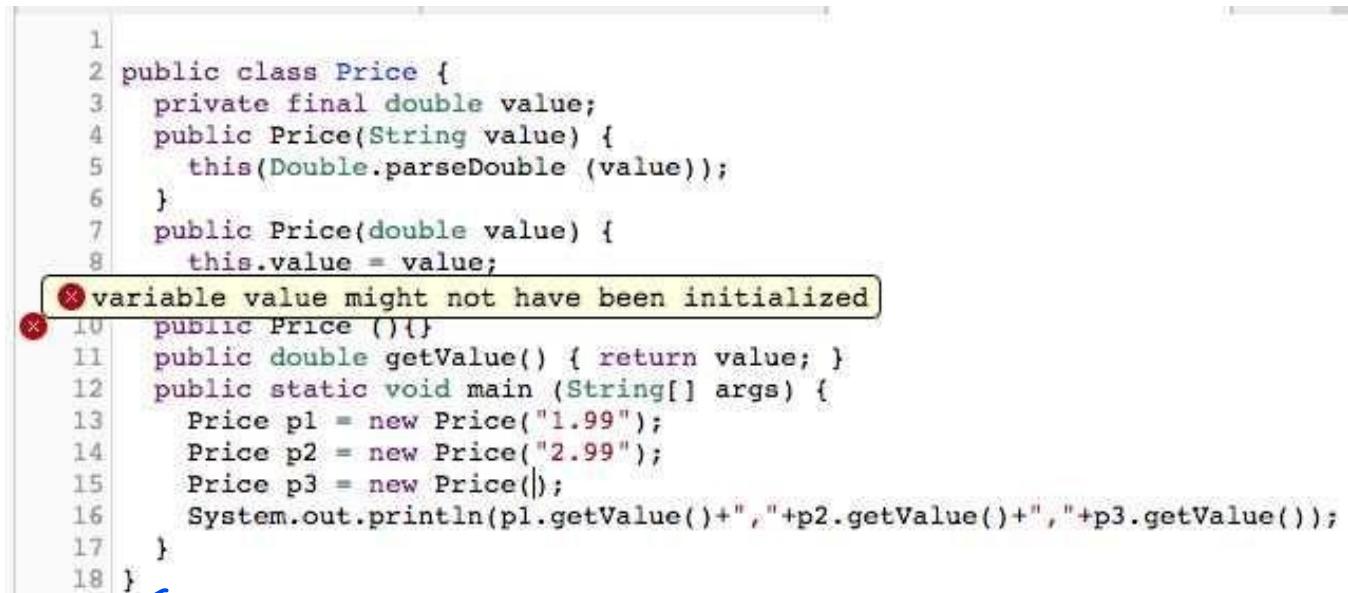
What is the result?

- A. The compilation fails.
- B. 1.99,2.99,0
- C. 1.99,2.99,0.0
- D. 1.99,2.99

---

### Answer: A

---



```

1
2 public class Price {
3     private final double value;
4     public Price(String value) {
5         this(Double.parseDouble (value));
6     }
7     public Price(double value) {
8         this.value = value;
9     }
10    public Price (){}variable value might not have been initialized
11    public double getValue() { return value; }
12    public static void main (String[] args) {
13        Price p1 = new Price("1.99");
14        Price p2 = new Price("2.99");
15        Price p3 = new Price();
16        System.out.println(p1.getValue()+" , "+p2.getValue()+" , "+p3.getValue());
17    }
18 }

```

---

### Question: 37

---

Given:

```
class ConSuper {  
    protected ConSuper() {  
        this(2);  
        System.out.print("1");  
    }  
    protected ConSuper(int a) {  
        System.out.print(a);  
    }  
}
```

and

```
public class ConSub extends ConSuper {  
    ConSub() {  
        this(4);  
        System.out.print("3");  
    }  
    ConSub(int a) {  
        System.out.print(a);  
    }  
    public static void main (String[] args) {  
        new ConSub(4);  
    }  
}
```

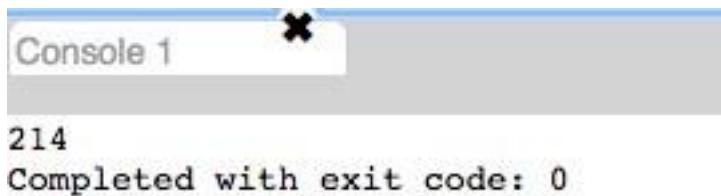
What is the result?

- A. 2134
- B. 2143
- C. 214
- D. 234

---

**Answer: C**

---



```
Console 1
214
Completed with exit code: 0
```

---

**Question: 38**

---

Given:

```
public class Tester {
    public static void main(String[] args) {
        String s = "this is it";
        int x = s.indexOf("is");
        s.substring(x+3);
        x = s.indexOf("is");
        System.out.println(s+" "+x);
    }
}
```

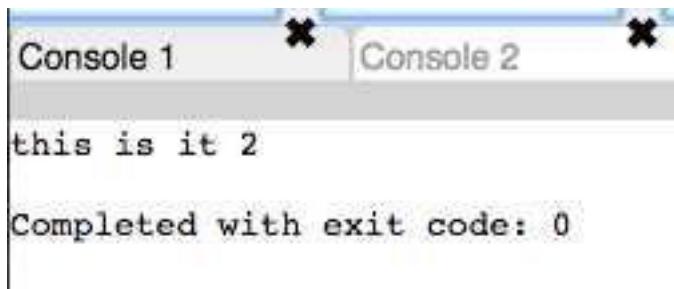
What is the result?

- A. is it 1
- B. An IndexOutOfBoundsException is thrown at runtime.
- C. is it 0
- D. this is it 2 E. this is it 3

---

**Answer: D**

---



```
Console 1      Console 2
this is it 2
Completed with exit code: 0
```

---

**Question: 39**

---

Which two commands are used to identify class and module dependencies? (Choose two.)

- A. jmod describe
  - B. java Hello.java
  - C. jdeps --list-deps
  - D. jar --show-module-resolution
  - E. java --show-module-resolution
- 

---

**Answer: C,E**

---

Reference: <https://docs.oracle.com/en/java/javase/11/tools/jdeps.html#GUID-A543FEBE-908A49BF-996C-39499367ADB4>

---

**Question: 40**

---

Given:

```
String[][] arr = {
    {"Red", "White"},
    {"Black"},
    {"Blue", "Yellow", "Green", "Violet"}
};
for(int row = 0; row < arr.length; row++) {
    int column = 0;
    for(; column < arr[row].length; column++) {
        System.out.println("[" + row + "," + column + "] = " + arr[row][column]);
    }
}
```

What is the result?

- A. [0,0] = Red[0,1] = White[1,0] = Black[1,1] = Blue[2,0] = Yellow[2,1] = Green[3,0] = Violet
- B. [0,0] = Red[1,0] = Black[2,0] = Blue
- C. java.lang.ArrayIndexOutOfBoundsException thrown
- D. [0,0] = Red[0,1] = White[1,0] = Black[2,0] = Blue[2,1] = Yellow[2,2] = Green[2,3] = Violet

---

**Answer: D**

---



```
Console 1 ✘ Console 2 ✘ Console 3 ✘

[0,0] =Red
[0,1] =White
[1,0] =Black
[2,0] =Blue
[2,1] =Yellow
[2,2] =Green
[2,3] =Violet

Completed with exit code: 0
```

---

**Question: 41**

---

Given:

```
import java.time.LocalDate;
import static java.time.DayOfWeek.*;
public class Main {
    public static void main(String[] args) {
        var today = LocalDate.now().with(TUESDAY).getDayOfWeek();
        switch(today) {
            case SUNDAY:
            case SATURDAY:
                System.out.println("Weekend");
                break;
            case MONDAY:  FRIDAY:
                System.out.println("Working");
            default:
                System.out.println("Unknown");
        }
    }
}
```

What is the result?

- A. WorkingUnknown
- B. Unknown
- C. TuesdayUnknown

- D. The compilation fails.
- E. Tuesday
- F. Working

---

**Answer: B**



Console 1      ✘      Console 2      ✘

Unkown

Completed with exit code: 0

**Question: 42**

---

Given:

```
public interface A {  
    abstract void x();  
}
```

and

```
public abstract class B /* position 1 */ {  
    /* position 2 */  
    public void x() { }  
    public abstract void z();  
}
```

and

```
public class C extends B implements A {  
/* position 3 */  
}
```

Which code, when inserted at one or more marked positions, would allow classes B and C to compile?

- A. @Override // position 3void x() {} // position 3@Override // position 3public void z() {} // position 3
- B. @Override // position 2public void z() {} // position 3
- C. implements A // position 1@Override // position 2
- D. public void z() {} // position 3

A

---

**Answer: B**

---

**Question: 43**

Given:

```
void myLambda() {  
    int i = 25;  
    Supplier<Integer> foo = () -> i;  
    i++;  
    System.out.println(foo.get());  
}
```

Which is true?

- A. The code compiles but does not print any result.
- B. The code prints 25.
- C. The code does not compile.
- D. The code throws an exception at runtime.

---

**Answer: C**

---

**Question: 44**

Which two statements are correct about modules in Java? (Choose two.)

- A. java.base exports all of the Java platforms core packages.
- B. module-info.java can be placed in any folder inside module-path.
- C. A module must be declared in module-info.java file.
- D. module-info.java cannot be empty.
- E. By default, modules can access each other as long as they run in the same folder.

---

**Answer: AC**

---

Reference: <http://tutorials.jenkov.com/java/modules.html>

---

**Question: 45**

---

Which two describe reasons to modularize the JDK? (Choose two.)

- A. easier to understand the Java language
- B. improves security and maintainability
- C. easier to expose implementation details
- D. improves application robustness
- E. easier to build a custom runtime linking application modules and JDK modules

---

**Answer: B,D**

---

---

**Question: 46**

---

Given:

```
public class Test {  
    public static void main(String[] args) {  
        int x;  
        int y = 5;  
        if (y > 2) {  
            x = ++y;  
            y = x + 7;  
        } else {  
            y++;  
        }  
        System.out.print(x + " " + y);  
    }  
}
```

What is the result?

- A. compilation error
- B. 0 5
- C. 6 13

D. 5 12

---

**Answer: A**

---

```
1 public class Test {  
2     public static void main (String[] args) {  
3         int x;  
4         int y = 5;  
5         if (y > 2) {  
6             x = ++y;  
7             y = x + 7;  
8         } else {  
9             y++.  
10        } variable x might not have been initialized  
11        System.out.print(x + " " +y);  
12    }  
13 }
```

**Question: 47**

---

Given:

```
public class DNASynth {  
    int aCount;  
    int tCount;  
    int cCount;  
    int gCount;  
  
    void setACount(int cCount){  
        cCount = cCount;  
    }  
    void setTCount(){  
        this.tCount = tCount;  
    }  
    int setCCount(){  
        return cCount;  
    }  
    int setGCount(int g){  
        gCount = g;  
        return gCount;  
    }  
    void setAllCounts(int x){  
        aCount = tCount = this.cCount = setGCount(x);  
    }  
}
```

Which two methods modify field values? (Choose two.)

- A. setAllCounts
- B. setACount
- C. setGCount
- D. setCCount
- E. setTCount

---

**Answer: AC**

---



**Question: 48**

Given:

```
public class Tester {  
    public static void main(String[] args) {  
        char letter = 'b';  
        int i = 0;  
        switch(letter) {  
            case 'a':  
                i++;  
                break;  
            case 'b':  
                i++;  
            case 'c' | 'd': // line 1  
                i++;  
            case 'e':  
                i++;  
                break;  
            case 'f':  
                i++;  
                break;  
            default:  
                System.out.print(letter);  
        }  
        System.out.println(i);  
    }  
}
```

What is the result?

- A. b1
  - B. 2
  - C. b2
  - D. 1
  - E. b3
  - F. 3
- G. The compilation fails due to an error in line 1.

---

**Answer: F**

---

**Result****CPU Time: 0.23 sec(s), Memory: 32708 kilobyte(s)**3**Question: 49**

Given the code fragment:

```
int x = 0;  
do {  
    x++;  
    if (x == 1) {  
        continue;  
    }  
    System.out.println(x);  
} while(x < 1);
```

What is the result?

- A. 01
- B. 0
- C. 1
- D. The program prints nothing.
- E. It prints 1 in the infinite loop.

---

**Answer: D**

---

**Question: 50**

Given:

```
public class Foo {  
    public static void main(String... args) {  
        for (var x : args) {  
            System.out.println(x);  
        }  
    }  
}
```

What is the type of the local variable x?

- A. Character
- B. char
- C. String[ ] D. String

---

**Answer: D**

---

**Question: 51**

Analyze the code:

```
public class Test {  
    static String prefix = "Global:";  
    private String name = "namescope";  
    public static String getName(){  
        return new Test().name;  
    }  
    public static void main(String[] args) {  
        Test t = new Test();  
        System.out.println(/* Insert code here */);  
    }  
}
```

Which two options can you insert inside println method to produce Global:namescope? (Choose two.)

- A. Test.prefix+Test.name
- B. new Test().prefix+new Test().name
- C. Test.prefix+Test.getName()

- D. Test.getName+prefix
- E. prefix+Test.name
- F. prefix+name

---

**Answer: B,C**

**Question: 52**

---

Given:

```
import java.util.*;
public class Foo {
    public List<Number> foo(Set<CharSequence> m) { ... }
}
```

and

```
import java.util.*;
public class Bar extends Foo {
    //line 1
}
```

Which two statements can be added at line 1 in Bar to successfully compile it? (Choose two.)

- A. public List<Integer> foo(Set<CharSequence> m) { ... }
- B. public ArrayList<Number> foo(Set<CharSequence> m) { ... }
- C. public List<Integer> foo(TreeSet<String> m) { ... }
- D. public List<Integer> foo(Set<String> m) { ... }
- E. public List<Object> foo(Set<CharSequence> m) { ... }
- F. public ArrayList<Integer> foo(Set<String> m) { ... }

---

**Answer: BC**

**Question: 53**

---

Given:

```
public class Foo {  
    private void print() {  
        System.out.println("Bonjour le monde!");  
    }  
    public void foo() {  
        print();  
    }  
}  
  
public class Bar extends Foo {  
    private void print() {  
        System.out.println("Hello world!");  
    }  
    public void bar() {  
        print();  
    }  
    public static void main(String... args) {  
        Bar b = new Bar();  
        b.foo();  
        b.bar();  
    }  
}
```

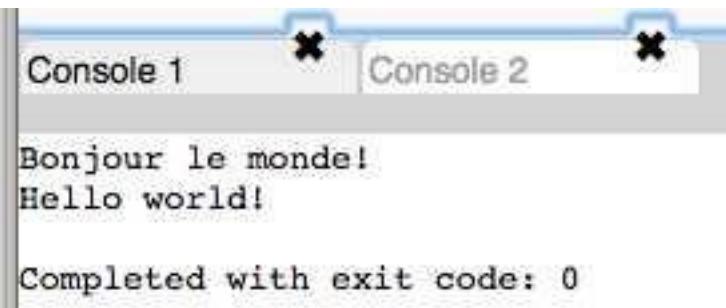
What is the output?

- A. Hello world!Bonjour le monde!
- B. Hello world!Hello world!
- C. Bonjour le monde!Hello world!
- D. Bonjour le monde!Bonjour le monde!

---

**Answer: C**

---



```
Console 1 ✘ Console 2 ✘
Bonjour le monde!
Hello world!

Completed with exit code: 0
```

---

**Question: 54**

---

Given:

```
public method foo() throws FooException {  
    ...  
}
```

and omitting the throws FooException clause results in a compilation error.

Which statement is true about FooException?

- A. FooException is a subclass of RuntimeException.
- B. FooException is unchecked.
- C. The body of foo can only throw FooException.
- D. The body of foo can throw FooException or one of its subclasses.

---

**Answer: D**

---

Reference: <https://stackoverflow.com/questions/47871728/throwing-a-parent-class-exception-forcedo-throw-its-sub-class-exception-event-t>

---

**Question: 55**

---

Which describes an aspect of Java that contributes to high performance?

- A. Java prioritizes garbage collection.
- B. Java has a library of built-in functions that can be used to enable pipeline burst execution.
- C. Java monitors and optimizes code that is frequently executed.
- D. Java automatically parallelizes code execution.

**Question: 56**

---

**Answer: C**

---

Given:

```
public class MethodTest {  
    // line 1  
}
```

Which two method implementations are correct, when inserted independently in line 1? (Choose two.)

A.

```
public boolean methodD(int x) {  
    return x > 0;  
}
```

B.

```
public String methodB() {  
    System.out.println("methodB");  
}
```

C.

```
public char methodE (String msg) {  
    return msg;  
}
```

D.

```
public void methodC(int x) {  
    return ++x;  
}
```

E.

```
public void methodA() {  
    System.out.println("methodA");  
}
```

- A. Option A
- B. Option B
- C. Option C

- D. Option D
- E. Option E

---

**Answer: A, E**

---

### **Question: 57**

---

Given the formula to calculate a monthly mortgage payment:

$$M = P \frac{r(1+r)^n}{(1+r)^n - 1}$$

and these declarations:

```
double m;           //monthly payment
double r = 0.05/12; //monthly interest rate
int p = 100_000;    //principal
int n = 180;        //number of payments
```

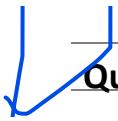
How can you code the formula?

- A. `m = p * (r * Math.pow(1 + r, n) / (Math.pow(1 + r, n) - 1));`
- B. `m = p * ((r * Math.pow(1 + r, n) / (Math.pow(1 + r, n)) - 1));`
- C. `m = p * r * Math.pow(1 + r, n) / Math.pow(1 + r, n) - 1;`
- D. `m = p * (r * Math.pow(1 + r, n) / Math.pow(1 + r, n) - 1);`

---

**Answer: A**

---



### **Question: 58**

---

Which is the correct order of possible statements in the structure of a Java class file?

- A. class, package, import
- B. package, import, class
- C. import, package, class
- D. package, class, import
- E. import, class, package

---

**Answer: B**

---

**Question: 59**

Given this requirement:

Module vehicle depends on module part and makes its com.vehicle package available for all other modules.

Which module-info.java declaration meets the requirement?

A

```
module vehicle{
    requires part;
    exports com.vehicle;
}
```

B

```
module vehicle {
    requires part;
    uses com.vehicle;
}
```

C

```
module vehicle{
    requires part;
    exports com.vehicle to part;
}
```

D

```
module vehicle {
    requires com.vehicle;
    exports part;
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

---

**Answer: A**

---

---

**Question: 60**

Given:

```
public interface ExampleInterface{ }
```

Which two statements are valid to be written in this interface? (Choose two.)

- A. public abstract void methodB();
- B. final void methodG(){System.out.println("G");}
- C. private abstract void methodC();
- D. public String methodD();
- E. public int x;
- F. final void methodE();
- G. public void methodF(){System.out.println("F");}

---

**Answer: AD**

---

**Question: 61**

Given:

```
public class Main {  
    public static void main(String[] args) {  
        for(int i = 0; i < args.length; i++) {  
            System.out.println(i + ". " + args[i]);  
            switch(args[i]) {  
                case "one":  
                    continue;  
                case "two":  
                    i--;  
                    continue;  
                default:  
                    break;  
            }  
        }  
    }  
}
```

executed with this command:

```
java Main one two three
```

What is the result?

- A. 0). one
- B. 0). one1). two2). three
- C. The compilation fails.
- D. It creates an infinite loop printing:0). one1). two1). two...
- E. A java.lang.NullPointerException is thrown.

---

**Answer: D**

---

### **Question: 62**

Given:

```
public interface Builder {  
    public A build(String str);  
}
```

and

```
public class BuilderImpl implements Builder {  
    @Override  
    public B build(String str) {  
        return new B(str);  
    }  
}
```

Assuming that this code compiles correctly, which three statements are true? (Choose three.)

- A. B cannot be abstract.
- B. B is a subtype of A.
- C. A cannot be abstract.
- D. A cannot be final.
- E. B cannot be final.
- F. A is a subtype of B.

---

**Answer: ABD**

---

**Question: 63**

Given:

```
public class Sportscar extends Automobile{  
    private float turbo;  
    ....  
    public void setTurbo (float turbo) {  
        this.turbo = turbo;  
    }  
}
```

What is known about the Sportscar class?

- A. The Sportscar class is a subclass of Automobile and inherits its methods.
- B. The Sportscar subclass cannot override setTurbo method from the superclass Automobile.
- C. The Sportscar class is a superclass that has more functionality than the Automobile class.
- D. The Sportscar class inherits the setTurbo method from the superclass Automobile.

---

**Answer: A**

---

**Question: 64**

Given:

```
public interface A {  
    public Iterable a();  
}  
public interface B extends A {  
    public Collection a();  
}  
public interface C extends A {  
    public Path a();  
}  
public interface D extends B, C {  
}
```

Why does D cause a compilation error?

- A. D inherits a() only from C.
- B. D inherits a() from B and C but the return types are incompatible.
- C. D extends more than one interface.
- D. D does not define any method.

---

**Answer: B**

---

**Question: 65**

Given:

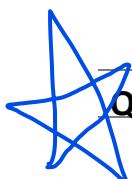
```
package test;
import java.time.*;
public class Diary {
    private LocalDate now = LocalDate.now();
    public LocalDate getDate() {
        return now;
    }
}
```

and

```
package test;
public class Tester {
    public static void main(String[] args) {
        Diary d = new Diary();
        System.out.println(d.getDate());
    }
}
```

Which statement is true?

- A. Class Tester does not need to import java.time.LocalDate because it is already visible to members of the package test.
- B. All classes from the package java.time. are loaded for the class Diary.
- C. Only LocalDate class from java.time package is loaded.
- D. Tester must import java.time.LocalDate in order to compile.



---

**Question: 66**

---

Given:

---

**Answer: A**

---

```
package A;
class Test {
    String name;
    public Test(String name) {
        this.name = name;
    }
    public String toString() {
        return name;
    }
}
```

and

```
package B;
import A.Test;
public class Main {
    public static void main(String[] args) {
        Test test = new Test("Student");
        System.out.println(test);
    }
}
```

What is the result?

- A. null
- B. nothing
- C. It fails to compile.
- D. java.lang.IllegalAccessException is thrown.
- E. Student

---

**Answer: C**

---

**Question: 67**

Given:

```
List<String> list = ... ;  
list.forEach( x -> { System.out.println(x); } );
```

What is the type of x?

- A. char
- B. List<Character>
- C. String
- D. List<String>

---

**Answer: C**

---

**Question: 68**

---

Which statement about access modifiers is correct?

- A. An instance variable can be declared with the static modifier.
- B. A local variable can be declared with the final modifier.
- C. An abstract method can be declared with the private modifier.
- D. An inner class cannot be declared with the public modifier.
- E. An interface can be declared with the protected modifier.

---

**Answer: B**

---

Reference: <https://javabeginnerstutorial.com/core-java-tutorial/instance-variable-java/>

**Question: 69**

---

Given the code fragment:

```
public static void main(String[] args) {  
    List<Integer> even = List.of();  
    even.add(0, -1);  
    even.add(0, -2);  
    even.add(0, -3);  
    System.out.println(even);  
}
```

What is the output?

- A. The compilation fails.
- B. [-1, -2, -3]
- C. [-3, -2, -1]
- D. A runtime exception is thrown.

**Question: 70**

---

**Answer: D**

Which command line runs the main class com.acme.Main from the module com.example?

- A. java --module-path mods com.example/com.acme.Main
- B. java --classpath com.example.jar com.acme.Main
- C. java --module-path mods -m com.example/com.acme.Main**
- D. java -classpath com.example.jar -m com.example/com.acme.Main

**Question: 71**

---

**Answer: D**

Given:

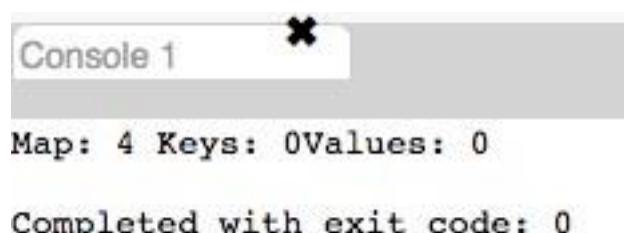
```
import java.util.*;  
  
public class Main {  
    static Map<String, String> map = new HashMap<>();  
    static List<String> keys =  
        new ArrayList<>(List.of("A", "B", "C", "D"));  
    static String[] values =  
        {"one", "two", "three", "four"};  
  
    static {  
        for(var i = 0; i < keys.size(); i++) {  
            map.put(keys.get(i), values[i]);  
        }  
    }  
  
    public static void main(String[] args) {  
        keys.clear();  
        values = new String[0];  
        System.out.println("Map: " + map.size() +  
                           " Keys: " + keys.size() +  
                           " Values: " + values.length);  
    }  
}
```

What is the result?

- A. Map: 0 Keys: 0 Values: 0
- B. The compilation fails.
- C. Map: 4 Keys: 4 Values: 4
- D. Map: 4 Keys: 0 Values: 0
- E. Map: 0 Keys: 4 Values: 4

---

**Answer: D**



The screenshot shows a Java console window titled "Console 1". The output of the program is displayed, showing the map size, key count, and value count all as 0. The console window has a close button (X) in the top right corner.

```
Console 1 ×  
Map: 0 Keys: 0 Values: 0  
Completed with exit code: 0
```

~~Question: 72~~

Given:

```
public class Person {  
    private String name;  
    public void setName(String name) {  
        String title = "Dr. ";  
        name = title+name;  
    }  
    public String toString() {  
        return name;  
    }  
}
```

and

```
public class Test {  
    public static void main(String args[]) {  
        Person p = new Person();  
        p.setName("Who");  
        System.out.println(p);  
    }  
}
```

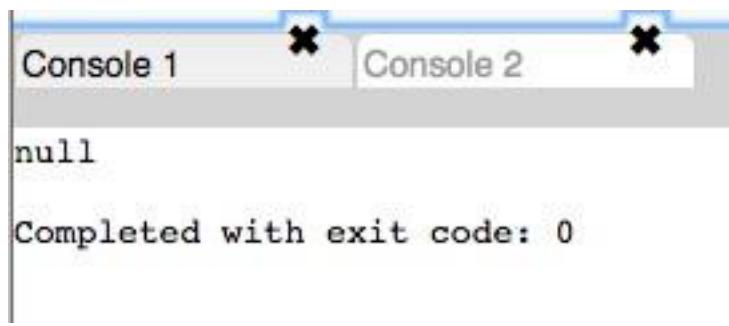
What is the result?

- A. Dr. Who
- B. Dr. Null
- C. An exception is thrown at runtime.
- D. null

---

**Answer: D**

---



```
Console 1 ✘ Console 2 ✘
null
Completed with exit code: 0
```

~~Question: 73~~

Given:

```
public class Test {
    private int sum;
    public int compute() {
        int x = 0;
        while(x < 3) {
            sum += x++;
        }
        return sum;
    }
    public static void main(String[] args) {
        Test t = new Test();
        int sum = t.compute();
        sum = t.compute();
        t.compute();
        System.out.println(sum);
    }
}
```

What is the result?

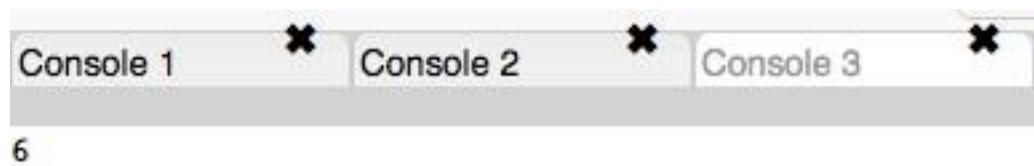
- A. 9
- B. An exception is thrown at runtime.

- C. 3  
D. 6

---

**Answer: D**

---



```
Console 1 * Console 2 * Console 3 *
6
Completed with exit code: 0
```

**Question: 74**

Given:

```
public class X {  
    private Collection collection;  
    public void set(Collection collection) {  
        this.collection = collection;  
    }  
}
```

and

```
public class Y extends X {  
    public void set(Map<String, String> map) {  
        super.set(map); // line 1  
    }  
}
```

Which two lines can replace line 1 so that the Y class compiles? (Choose two.)

- A. map.forEach((k, v) -> set(v));
- B. set(map.values());
- C. super.set(List<String> map)
- D. super.set(map.values());

E. set(map)

---

**Answer: B,D**

**Question: 75**

---

Given:

```
package a;
public abstract class Animal {
    protected abstract void walk();
}
package b;
public abstract class Human extends Animal {
    // line 1
}
```

Which two lines inserted in line 1 will allow this code to compile? (Choose two.)

- A. protected void walk(){}  
B. void walk(){}  
C. abstract void walk();  
D. private void walk(){}  
E. public abstract void walk();

---

**Answer: A, E**

**Question: 76**

---

Given:

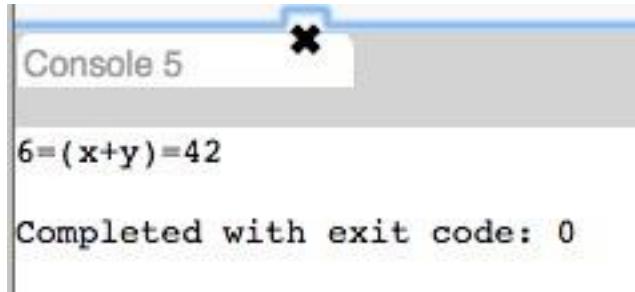
```
public class Tester {
    public static void main(String[] args) {
        int x = 4;
        int y = 2;
        System.out.println(x+y+"=(x+y)+"+x+y);
    }
}
```

What is the result?

- A. An exception is thrown at runtime.
- B.  $42=(x+y)=42$
- C.  $42=(x+y)=6$
- D.  $6=(x+y)=42$
- E.  $6=(x+y)=6$

---

**Answer: D**



```
6=(x+y)=42
Completed with exit code: 0
```

~~✓~~ **Question: 77**

Given:

```
public class Tester {
    public static void main(String[] args) {
        byte x = 7, y = 6;
        // line 1
        System.out.println(z);
    }
}
```

Which expression when added at line 1 will produce the output of 1.17?

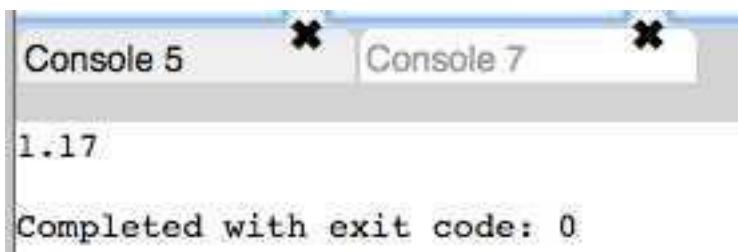
- A. float z = (float)(Math.round((float)x/y\*100)/100);
- B. float z = Math.round((int)(x/y),2);
- C. float z = Math.round((float)x/y,2);
- D. float z = Math.round((float)x/y\*100)/(float)100;

~~H~~

---

**Answer: D**

---



```
Console 5      ✘  Console 7      ✘  
1.17  
Completed with exit code: 0
```

---

**Question: 78**

---

Given:

```
public class Main {  
    public static void main(String[] args) {  
        int i = 1;  
        for(String s : args) {  
            System.out.println((i++) + " " + s);  
        }  
    }  
}
```

executed with this command:

java Main one two three What

is the output of this class?

- A. The compilation fails.
- B. 1) one2) two3) three
- C. A java.lang.ArrayIndexOutOfBoundsException is thrown.
- D. 1) one
- E. nothing

---

**Answer: B**

---

---

**Question: 79**

---

Which three initialization statements are correct? (Choose three.)

- A. int x = 12\_34;
- B. short sh = (short)'A';

- C. String contact# = "(+2) (999) (232)";
- D. boolean true = (4 == 4);
- E. float x = 1.99;
- F. int[][] e = {{1,1},{2,2}};
- G. byte b = 10;char c = b;

---

**Answer: ABF**

---

**Question: 80**

Given:

```
import java.io.FileNotFoundException;
import java.io.IOException;

public class Tester {
    public static void main(String[] args) {
        try {
            doA();
        } //line 1
    }
    private static void doA() throws IOException, IndexOutOfBoundsException {
        if (false) {
            throw new FileNotFoundException();
        } else {
            throw new IndexOutOfBoundsException();
        }
    }
}
```

What must be added in line 1 to compile this class?

- A. catch(IOException e) {}
  - B. catch(FileNotFoundException | IndexOutOfBoundsException e) {}
  - C. catch(FileNotFoundException | IOException e) {}
  - D. catch(IndexOutOfBoundsException e) {} catch(FileNotFoundException e) {}
  - E. catch(FileNotFoundException e) {} catch(IndexOutOfBoundsException e) {}
- 

**Answer: A**

---

**Question: 81**

Given the code fragment:

```
String s = "";
if (Double.parseDouble("11.00f") > 11) {
    s += 1;
}
if (1_7 == Integer.valueOf("17")) {
    s += 2;
}
if (1024 > 1023L) {
    s += 3;
}
System.out.print(s);
```

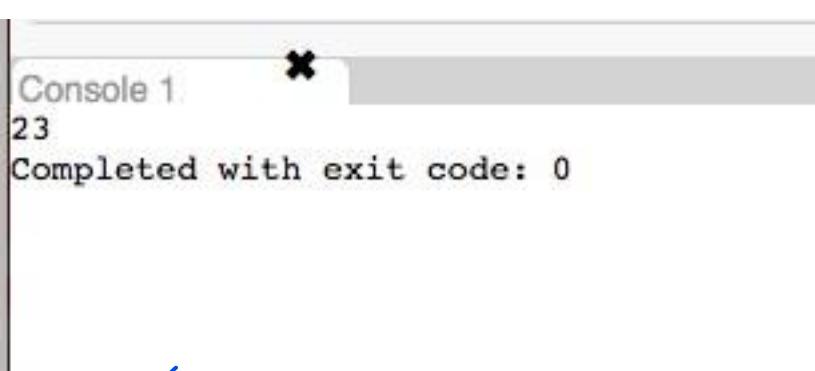
What is the result?

- A. 23
- B. 12
- C. 123
- D. 13

---

**Answer: A**

---



```
Console 1
23
Completed with exit code: 0
```

**Question: 82**

Given:

```
public class Foo {  
    public void foo(Collection arg) {  
        System.out.println("Bonjour le monde!");  
    }  
}
```

and

```
public class Bar extends Foo {  
    public void foo(Collection arg) {  
        System.out.println("Hello world!");  
    }  
    public void foo(List arg) {  
        System.out.println("Olá Mundo!");  
    }  
}
```

and

```
Foo f1 = new Foo();  
Foo f2 = new Bar();  
Bar b1 = new Bar();  
Collection<String> c = new ArrayList<>();
```

Which three are true? (Choose three.)

- A. b1.foo(c) prints Bonjour le monde!
- B. f1.foo(c) prints Hello world!
- C. f1.foo(c) prints Olá Mundo!
- D. b1.foo(c) prints Hello world!
- E. f2.foo(c) prints Olá Mundo!
- F. b1.foo(c) prints Olá Mundo!
- G. f2.foo(c) prints Bonjour le monde!
- H. f2.foo(c) prints Hello world!
- I. f1.foo(c) prints Bonjour le monde!

*DWTF*

---

Answer: B,F,G



### Question: 83

Given:

```
public class Person {  
    private String name = "Joe Bloggs";  
    public Person(String name) {  
        this.name = name;  
    }  
    public String toString() {  
        return name;  
    }  
}
```

and

```
public class Tester {  
    public static void main(String[] args) {  
        Person p1 = new Person(); // line 1  
        System.out.println(p1);  
    }  
}
```

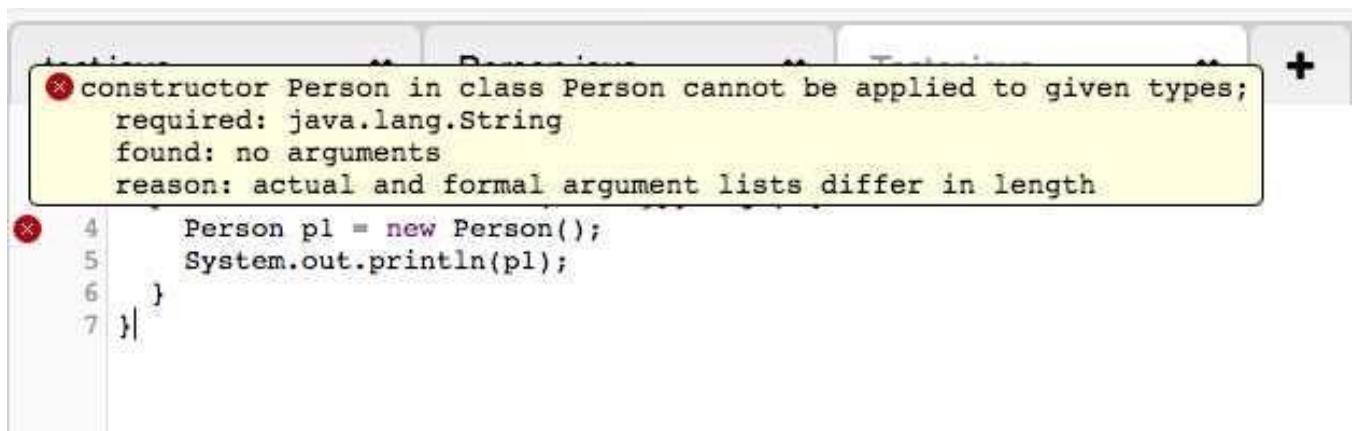
What is the result?

- A. null
- B. Joe Bloggs
- C. The compilation fails due to an error in line 1.
- D. p1

---

**Answer: C**

---



The screenshot shows a Java code editor with the following code:

```
1 constructor Person in class Person cannot be applied to given types;
  required: java.lang.String
  found: no arguments
  reason: actual and formal argument lists differ in length
2
3     Person p1 = new Person();
4     System.out.println(p1);
5 }
6
7 }
```

A yellow callout box highlights the first error message: "constructor Person in class Person cannot be applied to given types; required: java.lang.String found: no arguments reason: actual and formal argument lists differ in length".

---

**Question: 84**

---

Given:

```
public class DNASynth {
    int aCount;
    int tCount;
    int cCount;
    int gCount;

    int getACount(int aCount) {
        return aCount;
    }
    int getTCount(int tCount) {
        return this.tCount;
    }
    int getCCount() {
        return getTotalCount() - this.aCount - getTCount() - gCount;
    }
    int getGCount() {
        return getGCount();
    }
    int getTotalCount() {
        return aCount + getTCount() + this.cCount + this.gCount;
    }
}
```

Which two methods facilitate valid ways to read instance fields? (Choose two.)

- A. getTCount
- B. getACount
- C. getTotalCount

- D. getCCount  
E. getGCount

---

**Answer: C,D**

A D

**Question: 85**

Given:

```
public class Main {  
  
    public static void checkConfiguration(String filename) {  
        File file = new File(filename);  
        if(!file.exists()) {  
            throw new Error("Fatal Error: Configuration File, " +  
                filename + ", is missing.");  
        }  
    }  
  
    public static void main(String[] args) {  
        checkConfiguration("App.config");  
        System.out.println("Configuration is OK");  
    }  
}
```

If file "App.config" is not found, what is the result?

- A. Configuration is OK
- B. The compilation fails.
- C. Exception in thread "main" java.lang.Error:Fatal Error: Configuration File, App.config, is missing. D. nothing

C

Answer: B

```

Person.java
Tester.java

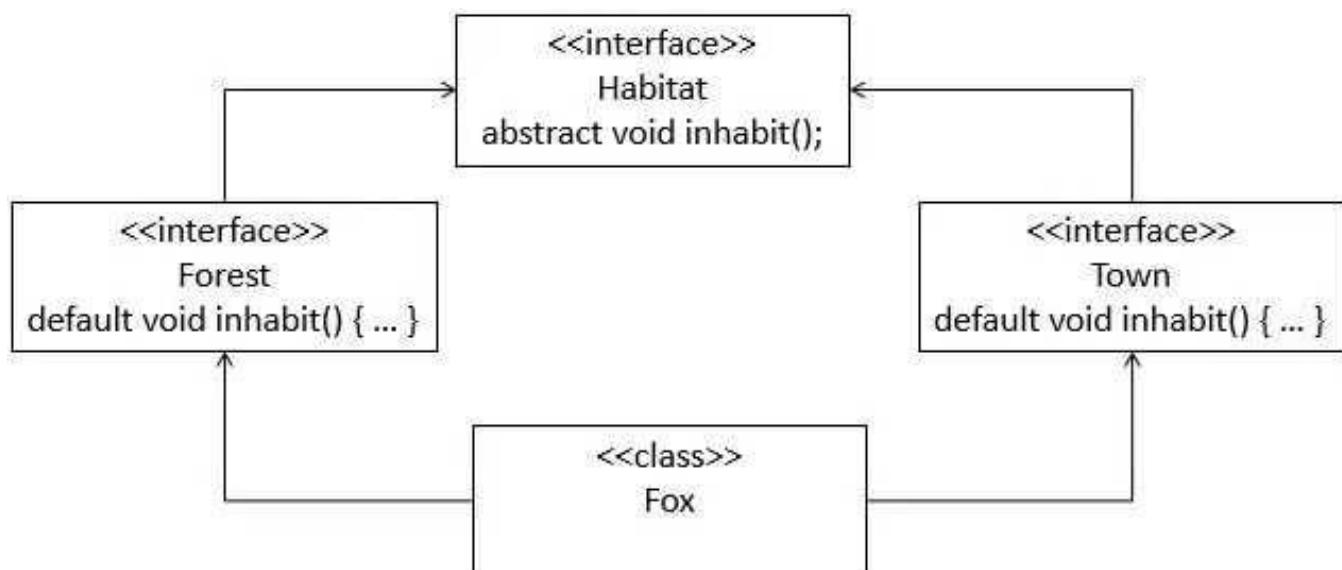
cannot find symbol
  symbol:   class File
  location: class Main
cannot find symbol
  symbol:   class File
  location: class Main

checkConfiguration(String filename) {
    File file = new File(filename);
    if(!file.exists()) {
        throw new Error("Fatal Error! Configuration File, "
                       + filename + ", is missing.");
    }
}
public static void main(String[] args) {
    checkConfiguration("App.config");
    System.out.println("Configuration is OK");
}
}

```

**Question: 86**

Given:



Which statement is true about the Fox class?

- A. Fox class does not have to override inhabit method, so long as it does not try to call it.
- B. Fox class does not have to override the inhabit method if Forest and Town provide compatible implementations.
- C. Fox class must implement either Forest or Town interfaces, but not both.
- D. The inhabit method implementation from the first interface that Fox implements will take precedence.
- E. Fox class must provide implementation for the inhabit method.

C

---

Answer: B

---

### Question: 87



Given:

```
public class Foo {  
    public void foo(Collection arg) {  
        System.out.println("Bonjour le monde!");  
    }  
}
```

and

```
public class Bar extends Foo {  
    public void foo(Collection arg) {  
        System.out.println("Hello world!");  
    }  
    public void foo(List arg) {  
        System.out.println("Hola Mundo!");  
    }  
}
```

and

```
Foo f1 = new Foo(); B  
Foo f2 = new Bar(); H  
Bar b1 = new Bar(); L  
List<String> li = new ArrayList<>();
```

Which three are correct? (Choose three.)

- A. b1.foo(li) prints Hello world!
- B. f1.foo(li) prints Bonjour le monde! ✓**
- C. f1.foo(li) prints Hello world!
- D. f1.foo(li) prints Hola Mundo!
- E. b1.foo(li) prints Bonjour le monde!
- F. f2.foo(li) prints Hola Mundo! ↗
- G. f2.foo(li) prints Bonjour le monde!
- H. b1.foo(li) prints Hola Mundo! ✓**
- I. f2.foo(li) prints Hello world! ✓**

---

**Answer: A,B,H**

---

**Question: 88**



Given:

Automobile.java

```
public abstract class Automobile { //line 1
    abstract void wheels();
}
```

Car.java

```
public class Car extends Automobile {
    // line 2
    void wheels(int i) { // line 3
        System.out.print(4);
    }
    public static void main(String[] args) {
        Automobile ob = new Car(); // line 4
        ob.wheels();
    }
}
```

What must you do so that the code prints 4?

- A. Remove the parameter from wheels method in line 3.
- B. Add @Override annotation in line 2.
- C. Replace the code in line 2 with Car ob = new Car();
- D. Remove abstract keyword in line 1.

---

**Answer: B**

---

```

1 Car is not abstract and does not override abstract method wheels() in
  Automobile
2 public class Car extends Automobile {
3
4     void wheels(int i) {
5         System.out.print(4);
6     }
7     public static void main(String[] args) {
8         Automobile ob = new Car();
9         ob.wheels();
10    }
11 }

```

---

**Question: 89**

---

Given:

/code/a/Test.java

containing:

```

package a;
import b.Best;
public class Test {
    public static void main(String[] args) {
        Best b = new Best();
    }
}

```

and

/code/b/Best.java

containing:

```

package b; public
class Best {}
```

Which is the valid way to generate bytecode for all classes?

- A. java /code/a/Test.java
- B. javac -d /code /code/a/Test
- C. java /code/a/Test.java /code/b/Best.java

- D. java -cp /code a.Test
- E. javac -d /code /code/a/Test.java /code/b/Best.java
- F. javac -d /code /code/a/Test.java

---

**Answer: E**

**Question: 90**

Examine this excerpt from the declaration of the java.se module:

```
module java.se {  
    ...  
    requires transitive java.sql;  
    ...  
}
```

What does the transitive modifier mean?

- A. Only a module that requires the java.se module is permitted to require the java.sql module.
- B. Any module that requires the java.se module does not need to require the java.sql module.**
- C. Any module that attempts to require the java.se module actually requires the java.sql module instead.
- D. Any module that requires the java.sql module does not need to require the java.se module.

---

**Answer: A**

**Question: 91**

Given:

```
public class Person {  
    private String name;  
    public Person(String name) {  
        this.name = name;  
    }  
    public String toString() {  
        return name;  
    }  
}
```

and

```
public class Tester {  
    public static void main(String[] args) {  
        Person p = null;  
        checkPerson(p);  
        System.out.println(p);  
        p = new Person("Mary");  
        checkPerson(p);  
        System.out.println(p);  
    }  
    public static Person checkPerson(Person p) {  
        if (p == null) {  
            p = new Person("Joe");  
        } else {  
            p = null;  
        }  
        return p;  
    }  
}
```

What is the result?

- A. JoeMarry
- B. Joenull
- C. nullnull
- D. nullMary

---

**Answer: D**

---



```
Console 1 * Console 2 * Console 3 *
null
Mary
```

Completed with exit code: 0

~~Question: 92~~

Given:

```
class Super {
    static String greeting() { return "Good Night"; }
    String name() { return "Harry"; }
}
```

and

```
class Sub extends Super {
    static String greeting() { return "Good Morning"; }
    String name() { return "Potter"; }
}
```

and

```
class Test {
    public static void main(String[] args) {
        Super s = new Sub();
        System.out.println(s.greeting() + ", " + s.name());
    }
}
```

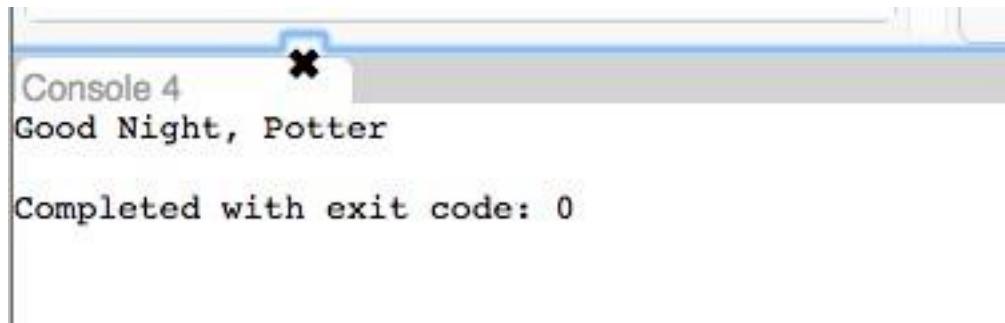
What is the result?

- A. Good Morning, Potter
- B. Good Night, Potter
- C. Good Morning, Harry
- D. Good Night, Harry

---

**Answer: B**

---



```
Console 4
Good Night, Potter
Completed with exit code: 0
```



---

**Question: 93**

---

Given:

```
1. public class Main {
2.     public static void greet(String... args) {
3.         System.out.print("Hello ");
4.         for (String arg : args) {
5.             System.out.println(arg);
6.         }
7.     }
8.     public static void main(String[] args) {
9.         Main c = null;
10.        c.greet();
11.    }
12. }
```

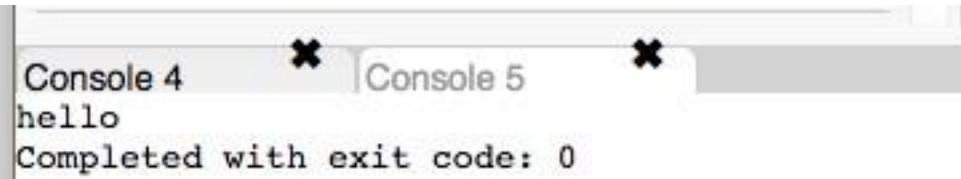
What is the result?

- A. NullPointerException is thrown at line 4.
- B. NullPointerException is thrown at line 10.
- C. A compilation error occurs.
- D. Hello

---

**Answer: D**

---



```
Console 4  ✘ Console 5  ✘
hello
Completed with exit code: 0
```

Question: 94

Given:

```
for(var i = 0; i < 10; i++) {
    switch(i%5) {
        case 2:
            i *= i;
            break;
        case 3:
            i++;
            break;
        case 1:
        case 4:
            i++;
            continue;
        default:
            break;
    }
    System.out.print(i + " ");
    i++;
}
```

What is the result?

- A. nothing
- B. 0
- C. 10
- D. 0 4 9

---

**Answer: A**

---

~~Not Yet~~

---

**Question: 95**

What makes Java dynamic?

- A. At runtime, classes are loaded as needed, and new code modules can be loaded on demand.
- B. The runtime can process machine language sources as well as executables from different language compilers.
- C. The Java compiler uses reflection to test if class methods are supported by resources of a target platform.
- D. The Java compiler preprocesses classes to run on specific target platforms.

---

**Answer: A**

---

~~Not Yet~~

---

**Question: 96**

Given the code fragment:

```
Path currentFile = Paths.get("/scratch/exam/temp.txt");
Path outputFile = Paths.get("/scratch/exam/new.txt");
Path directory = Paths.get("/scratch/");

Files.copy(currentFile, outputFile);
Files.copy(outputFile, directory);
Files.delete(outputFile);
```

The /scratch/exam/temp.txt file exists. The /scratch/exam/new.txt and /scratch/new.txt files do not exist.

What is the result?

- A. /scratch/exam/new.txt and /scratch/new.txt are deleted.
- B. The program throws a FileAlreadyExistsException.
- C. The program throws a NoSuchFileException.
- D. A copy of /scratch/exam/new.txt exists in the /scratch directory and /scratch/exam/new.txt is deleted.

---

**Answer: C**

---

```
27 public class Main {  
28     public static void main(String[] args) {  
29         Path currentFile = Paths.get("/scratch/exam/temp.txt");  
30         Path outputFile = Paths.get("/scratch/exam/new.txt");  
31         Path directory = Paths.get("/scratch/");  
32  
33         Files.copy(currentFile, outputFile);  
34         Files.copy(outputFile, directory);  
35         Files.delete (outputFile);  
36     }  
37 }  
38
```

---

**Question: 97**

---

Which two are functional interfaces? (Choose two.)

- A. 

```
@FunctionalInterface  
interface MyRunnable {  
    public void run();  
}
```
- B. 

```
@FunctionalInterface  
interface MyRunnable {  
    public void run();  
    public void call();  
}
```
- C. 

```
interface MyRunnable {  
    public default void run() {}  
    public void run(String s);  
}
```
- D. 

```
@FunctionalInterface  
interface MyRunnable {  
}
```
- E. 

```
interface MyRunnable {  
    @FunctionalInterface  
    public void run();  
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D
- E. Option E

---

**Answer: CE****A C**

Reference: <http://tutorials.jenkov.com/java-functional-programming/functional-interfaces.html>

---

**Question: 98**

Given the declaration:

```
@interface Resource {  
    String name();  
    int priority() default 0;  
}
```

Examine this code fragment:

```
/* Loc1 */ class ProcessOrders { ... }
```

Which two annotations may be applied at Loc1 in the code fragment? (Choose two.)

- A. @Resource(priority=100)
- B. @Resource(priority=0)
- C. @Resource(name="Customer1", priority=100)
- D. @Resource(name="Customer1")
- E. @Resource

---

**Answer: AB****C D**

---

**Question: 99**

Given:

```

interface MyInterface1 {
    public int method() throws Exception;
    private void pMethod() { /* an implementation of pMethod */ }
}
interface MyInterface2 {
    public static void sMethod() { /* an implementation of sMethod */ }
    public boolean equals();
}
interface MyInterface3 {
    public void method();
    public void method(String str);
}
interface MyInterface4 {
    public void dMethod() { /* an implementation of dMethod */ }
    public void method();
}
interface MyInterface5 {
    public static void sMethod();
    public void method(String str);
}

```

Which two interfaces can be used in lambda expressions? (Choose two.)

- A. MyInterface1
- B. MyInterface3
- C. MyInterface5
- D. MyInterface2**
- E. MyInterface4

**Answer: CD**

Reference: <https://dzone.com/articles/functional-interface-and-lambda-expression>

### ~~Question: 100~~

Given this enum declaration:

```

1. enum Alphabet {
2.     A, B, C
3.
4. }

```

Examine this code:

```
System.out.println(Alphabet.getFirstLetter());
```

What code should be written at line 3 to make this code print A?

- A. final String getFirstLetter() { return A.toString(); }

- B. static String getFirstLetter() { return Alphabet.values()[1].toString(); }  
C. static String getFirstLetter() { return A.toString(); }  
D. String getFirstLetter() { return A.toString(); }

---

**Answer: C**



### Question: 101

Given these two classes:

```
public class Resource {
    public Worker owner;
    public synchronized boolean claim(Worker worker) {
        if (owner == null) {
            owner = worker;
            return true;
        }
        else return false;
    }
    public synchronized void release() {
        owner = null;
    }
}

public class Worker {
    public synchronized void work(Resource... resources) {
        for (int i = 0; i < 10; i++) {
            while (!resources[0].claim(this)) { }
            while (!resources[1].claim(this)) { }
            // do work with resource
            resources[1].release();
            resources[0].release();
        }
    }
}
```

And given this fragment:

```
Worker w1 = new Worker();
Worker w2 = new Worker();
Resource r1 = new Resource();
Resource r2 = new Resource();
new Thread( () -> {
    w1.work(r1, r2);
} ).start();
new Thread( () -> {
    w2.work(r2, r1);
} ).start();
```

Which describes the fragment?

- A. It throws IllegalMonitorStateException.
- B. It is subject to deadlock.
- C. It is subject to livelock.
- D. The code does not compile.

C

---

**Answer: D**

---

**Question: 102**

Given:

```
public interface TestInterface {  
    default void samplingProbeProcedure() {  
        probeProcedure();  
        System.out.println("Collect Sample");  
        System.out.println("Leave Asteroid");  
        System.out.println("Dock with Main Craft");  
    }  
    default void explosionProbeProcedure() {  
        probeProcedure();  
        System.out.println("Explode")  
    }  
}
```

Examine these requirements:

Eliminate code duplication.

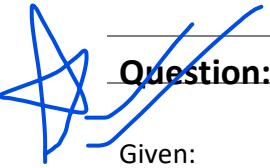
Keep constant the number of methods other classes may implement from this interface.

Which method can be added to meet these requirements?

- A. private default void probeProcedure(){  
    System.out.println("Launch Probe");  
    System.out.println("Land on Asteroid");  
}
  - B. static void probeProcedure(){  
    System.out.println("Launch Probe");  
    System.out.println("Land on Asteroid");  
}
  - C. private void probeProcedure(){  
    System.out.println("Launch Probe");  
    System.out.println("Land on Asteroid");  
}
  - D. default void probeProcedure(){  
    System.out.println("Launch Probe");  
    System.out.println("Land on Asteroid");  
}
- A. Option A  
B. Option B  
C. Option C  
D. Option D

---

**Answer: B**

  
**Question: 103**

Given:

```
public class Main {  
    public static void main(String[] args) {  
        Thread t1 = new Thread(new MyThread());  
        Thread t2 = new Thread(new MyThread());  
        Thread t3 = new Thread(new MyThread());  
  
        t1.start();  
        t2.run();  
        t3.start();  
  
        t1.start();  
    }  
}  
class MyThread implements Runnable {  
    public void run() {  
        System.out.println("Running.");  
    }  
}
```

Which one is correct?

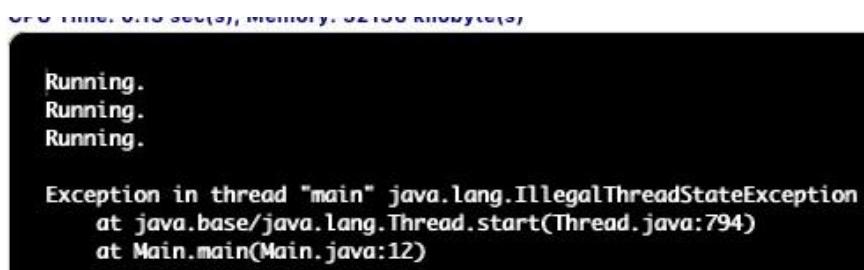
- A. An IllegalThreadStateException is thrown at run time.
- B. Three threads are created.
- C. The compilation fails.
- D. Four threads are created.

---

### Answer: A

---

Explanation:



```
java -Xms512m -Xmx512m -XX:+UseSerialGC -Djava.util.ServiceLoader.failOnExtends = false Main  
Running.  
Running.  
Running.  
  
Exception in thread "main" java.lang.IllegalThreadStateException  
at java.base/java.lang.Thread.start(Thread.java:794)  
at Main.main(Main.java:12)
```

### Question: 104

Which code fragment does a service use to load the service provider with a Print interface?

- A. private Print print = com.service.Provider.getInstance();
- B. private java.util.ServiceLoader<Print> loader = ServiceLoader.load (Print.class);
- C. private java.util.ServiceLoader<Print> loader = new java.util.ServiceLoader<>();

D. private Print print = new com.service.Provider.PrintImpl();

---

**Answer: B**

---

Reference: <https://docs.oracle.com/javase/8/docs/api/?java/util/ServiceLoader.html>

---

**Question: 105**

---

Examine these module declarations:

```
module ServiceAPI {  
    exports com.example.api;  
}  
  
module ServiceProvider {  
    requires ServiceAPI;  
    provides com.example.api with com.myimpl.Impl;  
}  
  
module Consumer {  
    requires ServiceAPI;  
    uses com.example.api;  
}
```

Which two statements are correct? (Choose two.)

- A. The ServiceProvider module is the only module that, at run time, can provide the com.example.api API.
- B.** The placement of the com.example.api API in a separate module, ServiceAPI, makes it easy to install multiple provider modules.
- C. The Consumer module should require the ServiceProvider module.
- D. The ServiceProvider module should export the com.myimpl package.
- E.** The ServiceProvider module does not know the identity of a module (such as Consumer) that uses the com.example.api API.

---

**Answer: AC**

---

---

**Question: 106**

---

Given:

A handwritten mark consisting of a blue circle with a diagonal line through it, followed by the letters 'AC' in blue ink.

```
public class Main {  
    public static void main(String[] args) {  
        Optional<String> value = createValue();  
        String str = value.orElse ("Duke");  
        System.out.println(str);  
    }  
    static Optional<String> createValue() {  
        String s = null;  
        return Optional.ofNullable(s);  
    }  
}
```

What is the output?

- A. null
- B. A NoSuchElementException is thrown at run time.
- C. Duke
- D. A NullPointerException is thrown at run time.

---

**Answer: C**

---

Explanation:

```
14  
15+ public class Main {  
16+     public static void main(String[] args) {  
17         Optional<String> value = createValue();  
18         String str = value.orElse ("Duke");  
19         System.out.println(str);  
20     }  
21+     static Optional<String> createValue() {  
22         String s = null;  
23         return Optional.ofNullable(s);  
24     }  
25 }  
26
```

Result

CPU Time: 0.15 sec(s), Memory: 32572 kilobyte(s)

Duke

 Question: 107

Given:

```
1. public class Test {  
2.     private static class Greet {  
3.         private void print() {  
4.             System.out.println("Hello World");  
5.         }  
6.     }  
7.     public static void main(String[] args) {  
8.         Test.Greet i = new Greet();  
9.         i.print();  
10.    }  
11. }
```

What is the result?

- A. The compilation fails at line 9.
- B. The compilation fails at line 2.
- C. Hello World
- D. The compilation fails at line 8.

---

### Answer: C

---

Explanation:

```
1. public class Test {  
2.     private static class Greet {  
3.         private void print() {  
4.             System.out.println("Hello World");  
5.         }  
6.     }  
7.     public static void main(String[] args) {  
8.         Test.Greet i = new Greet();  
9.         i.print();  
10.    }  
11. }
```

Execute Mode, Version, Inputs & Arguments

JDK 11.0.4

CommandLine Arguments

Result

CPU Time: 0.16 sec(s), Memory: 32504 kilobyte(s)

Hello World

**Question: 108**

Assume ds is a DataSource and the EMP table is defined appropriately.

```
try (Connection conn = ds.getConnection();
     PreparedStatement ps = conn.prepareStatement("INSERT INTO EMP VALUES(?, ?, ?)")) {
    ps.setObject(1, 101, JDBCType.INTEGER);
    ps.setObject(2, "SMITH", JDBCType.VARCHAR);
    ps.setObject(3, "HR", JDBCType.VARCHAR);
    ps.executeUpdate();
    ps.setInt(1, 102);
    ps.setString(2, "JONES");
    ps.executeUpdate();
}
```

What does executing this code fragment do?

- A. inserts two rows (101, 'SMITH', 'HR') and (102, 'JONES', NULL)
- B.** inserts two rows (101, 'SMITH', 'HR') and (102, 'JONES', 'HR')
- C. inserts one row (101, 'SMITH', 'HR')
- D. throws a SQLException

**B**

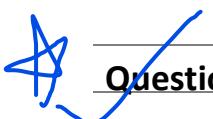
**Answer: C****Question: 109**

Assuming the Widget class has a getPrice method, this code does not compile:

```
List widgets = List.of(new Widget("Basic Widget", 19.55), // line 1
                      new Widget("Enhanced Widget", 35.00),
                      new Widget("Luxury Edition Widget", 55.45));
Stream widgetStream = widgets.stream(); // line 4
widgetStream.filter(a -> a.getPrice() > 20.00) // line 5
               .forEach(System.out::println);
```

Which two statements, independently, would allow this code to compile? (Choose two.)

- A. Replace line 5 with widgetStream.filter(a -> ((Widget)a).getPrice() > 20.00).
- B. Replace line 1 with List<Widget> widgetStream = widgets.stream();.
- C. Replace line 5 with widgetStream.filter((Widget a) -> a.getPrice() > 20.00).
- D. Replace line 4 with Stream<Widget> widgetStream = widgets.stream();.

**Answer: AD****Question: 110**

Given:

```

var numbers = List.of(1,2,3,4,5,6,7,8,9,10);
// line 1
StringBuilder sb = new StringBuilder();
for(int a: numbers) {
    sb.append(f.apply(a));
    sb.append(" ");
}
System.out.println(sb.toString());

```

Which statement on line 1 enables this code to compile?

- A. Function<Integer, Integer> f = n -> n \* 2;
- B. Function<Integer> f = n -> n \* 2;
- C. Function<int> f = n -> n \* 2;
- D. Function<int, int> f = n -> n \* 2;
- E. Function f = n -> n \* 2;

---

### Answer: A

---

Explanation:

```

15
16  public class Main {
17  public static void main(String[] args) {
18      var numbers = List.of(1,2,3,4,5,6,7,8,9,10);
19      Function<Integer, Integer> f = n -> n * 2;
20      StringBuilder sb = new StringBuilder();
21      for(int a: numbers) {
22          sb.append(f.apply(a));
23          sb.append(" ");
24      }
25      System.out.println(sb.toString());
26  }
27 }
28

```

Result

CPU Time: 0.22 sec(s), Memory: 33056 kilobyte(s)

2 4 6 8 10 12 14 16 18 20




---

### Question: 111

---

Given:

```
var fruits = List.of("apple", "orange", "banana", "lemon");
```

You want to examine the first element that contains the character n. Which statement will accomplish this?

- A. String result = fruits.stream().filter(f -> f.contains("n")).findAny();
- B. fruits.stream().filter(f -> f.contains("n")).forEachOrdered(System.out::print);
- C. Optional<String> result = fruits.stream().filter(f -> f.contains ("n")).findFirst ();
- D. Optional<String> result = fruits.stream().anyMatch(f -> f.contains("n"));

C

---

### Answer: B

---

Explanation:

```
1 import java.io.*;
2 import java.util.*;
3 public class abc {
4     public static void main(String[] args) {
5
6         var fruits = List.of("apple", "orange", "banana", "lemon");
7
8         fruits.stream().filter(f -> f.contains("n")).forEachOrdered(System.out::print);
9
10    }
11 }
12 }
```

Execute Mode, Version, Inputs & Arguments

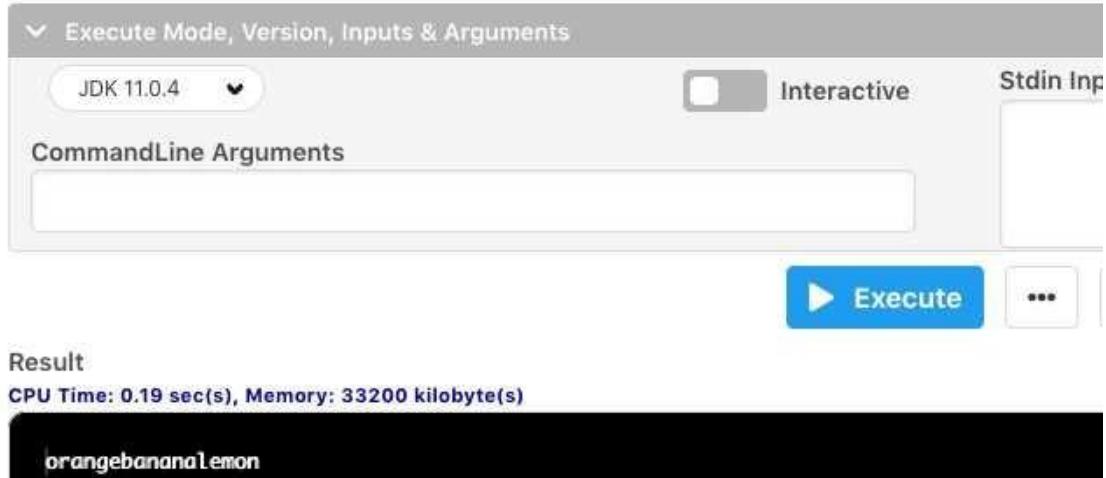
JDK 11.0.4     Interactive    Stdin Inp

CommandLine Arguments

Result

CPU Time: 0.19 sec(s), Memory: 33200 kilobyte(s)

orangebananalemon



---

### Question: 112

---

Given:

```
public class Foo {  
    private final ReentrantLock lock = new ReentrantLock();  
    private State state;  
    public void foo() throws Exception {  
        try {  
            lock.lock();  
            state.mutate();  
        }  
        finally {  
            lock.unlock();  
        }  
    }  
}
```

What is required to make the Foo class thread safe?

- A. No change is required.
- B. Make the declaration of lock static.
- C. Replace the lock constructor call with new ReentrantLock (true).
- D. Move the declaration of lock inside the foo method.

---

**Answer: C**

---

Reference: <https://stackoverflow.com/>

**Question:s/55134811**

/how-to-make-java-class-thread-safe

Question: 113

Given:

```
var data = new  
ArrayList<>();  
data.add("Peter");  
data.add(30);  
data.add("Market Road");  
data.set(1, 25);  
data.remove(2); data.set(3,  
1000L);  
System.out.print(data);
```

What is the output?

- A. [Market Road, 1000]
- B. [Peter, 30, Market Road]

- C. [Peter, 25, null, 1000]
- D. An exception is thrown at run time.

---

**Answer: D**

Explanation:

```
Console 1 ✘
Exception in thread "main" java.lang.IndexOutOfBoundsException: Index 3 out of bounds for length 2
    at java.base/jdk.internal.util.Preconditions.outOfBounds(Preconditions.java:64)
    at java.base/jdk.internal.util.Preconditions.outOfBoundsCheckIndex(Preconditions.java:70)
    at java.base/jdk.internal.util.Preconditions.checkIndex(Preconditions.java:248)
    at java.base/java.util.Objects.checkIndex(Objects.java:372)
    at java.base/java.util.ArrayList.set(ArrayList.java:472)
    at abc.main(abc.java:13)

Completed with exit code: 1
```

---

**Question: 114**

Which code fragment compiles?

- A. Comparator comparator = new Comparator<?>() {  
 public int compare(Integer i, Integer j) {  
 return i.compareTo(j);  
 }  
};
- B. var comparator = new Comparator<>() {  
 public int compare(Integer i, Integer j) {  
 return i.compareTo(j);  
 }  
};
- C. Comparator<> comparator = new Comparator<Integer>() {  
 public int compare(Integer i, Integer j) {  
 return i.compareTo(j);  
 }  
};
- D. Comparator<Integer> comparator = new Comparator<>() {  
 public int compare(Integer i, Integer j) {  
 return i.compareTo(j);  
 }  
};

- A. Option A
- B. Option B
- C. Option C
- D. Option D




---

**Answer: D**

---

Explanation:

```

1 import java.io.*;
2 import java.util.*;
3 class abc {
4     public static void main(String[] args) {
5
6         Comparator<Integer> comparator = new Comparator<>() {
7             public int compare(Integer i, Integer j) {
8                 return i.compareTo(j);
9             }
10        };
11    }
12 }
13 }
14 }
```



### **Question: 115**

Which two are successful examples of autoboxing? (Choose two.)

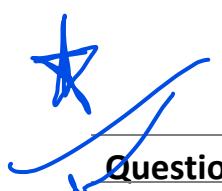
- A. String a = "A";
- B.** Integer e = 5;
- C. Float g = Float.valueOf(null);
- D. Double d = 4;
- E.** Long c = 23L;
- F. Float f = 6.0;

**BE**

---

**Answer: AB**

---



### **Question: 116**

Given:

```

public class Hello {
    class Greeting {
        void sayHi() {
            System.out.println("Hello world");
        }
    }
    public static void main(String... args) {
        // Line 1
    }
}
```

What code must you insert on Line 1 to enable the code to print Hello world?

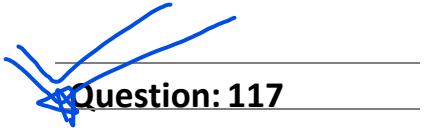
- A. Hello.Greeting myG = new Hello.Greeting() myG.sayHi();
- B. Hello myH = new Hello();  
Hello.Greeting myG = myH.new Greeting();  
myG.sayHi();
- C. Hello myH = new Hello();  
Hello.Greeting myG = myH.new Hello.Greeting();  
myG.sayHi();
- D. Hello myH = new Hello(); Greeting myG = new Greeting(); myG.sayHi();

---

**Answer: B**

---

Explanation:



---

**Question: 117**

---

Which code fragment prints 100 random numbers?

- A. var r= new Random();  
new DoubleStream(r::nextDouble).limit(100).forEach(System.out::print);
- B. DoubleStream.generate(Random::nextDouble)  
.limit (100).forFach(System.out::print);
- C. Doublestream.generate(Random.nextDouble).limit(100).forEach(System.out.print);
- D. var r = new Random(); DoubleStream.generate(r::nextDouble).limit(100).forEach(System.out::print);

- A. Option A
- B. Option B
- C. Option C
- D. Option D

---

**Answer: D**

---

Reference: <https://www.javacodegeeks.com/2014/01/java-util-random-in-java-8.html>

---

**Question: 118**

---

You are working on a functional bug in a tool used by your development organization. In your investigation, you find that the tool is executed with a security policy file containing this grant.

```
grant codebase "file:${klib.home}/j2se/home/klib.jar" {  
    permission java.security.AllPermission;  
};
```

What action should you take?

- A. Nothing, because it is an internal tool and not exposed to the public.
- B. Remove the grant because it is excessive.
- C. Nothing, because it is not related to the bug you are investigating.
- D. File a security bug against the tool referencing the excessive permission granted.
- E. Nothing, because listing just the required permissions would be an ongoing maintenance challenge.

---

**Answer: D**

---

Reference: <https://wiki.sei.cmu.edu/confluence/display/java/ENV03-J.+Do+not+grant+dangerous+combinations+of+permissions>

---

**Question: 119**

---

Given an application with a main module that has this module-info.java file:

```
module main {  
    exports country;  
    uses country.CountryDetails;  
}
```

Which two are true? (Choose two.)

- A. A module providing an implementation of country.CountryDetails can be compiled and added without recompiling the main module.
- B. A module providing an implementation of country.CountryDetails must have a requires main; directive in its module-info.java file.
- C. An implementation of country.countryDetails can be added to the main module.
- D. To compile without an error, the application must have at least one module in the module source path that provides an implementation of country.CountryDetails.
- E. To run without an error, the application must have at least one module in the module path that provides an implementation of country.CountryDetails.

NB

---

**Answer: BD**

---

Reference: <https://stackoverflow.com/>

---

**Question:s/49476559**

---

/java-9-error-not-in-a-module-on-the-module-source-path

Question: 120

Given: \*

```

enum Color implements Serializable {
    R(1), G(2), B(3);
    int c;
    public Color(int c) {
        this.c = c;
    }
}

```

What action ensures successful compilation?

- A. Replace public Color(int c) with private Color(int c).
- B. Replace int c; with private int c;.
- C. Replace int c; with private final int c;.
- D. Replace enum Color implements Serializable with public enum Color.
- E. Replace enum Color with public enum Color.

---

### Answer: A

---

Explanation:

```

1
2 import java.io.*;
3 import java.util.*;
4 class Hello {
5
6
7     enum Color implements Serializable {
8         R(1), G(2), B(3);
9         int c;
10        private Color (int c) {
11            this.c = c;
12        }
13    }
14 }

```

---

### Question: 121

---

var numbers = List.of(0,1,2,3,4,5,6,7,8,9);

You want to calculate the average of numbers. Which two codes will accomplish this? (Choose two.)

- A. double avg = numbers.stream().parallel().averagingDouble(a -> a);
- B. double avg = numbers.parallelStream().mapToInt (m -> m).average().getAsDouble ();**
- C. double avg = numbers.stream().mapToInt (i -> i).average().parallel();
- D. double avg = numbers.stream().average().getAsDouble();
- E. double avg = numbers.stream().collect(Collectors.averagingDouble(n -> n));**

**B E****Answer: BD**

Explanation:

```

1 import java.io.*;
2 import java.util.*;
3 class Hello {
4     public static void main(String[] args) {
5         var numbers = List.of(0,1,2,3,4,5,6,7,8,9);
6         double avg = numbers.parallelStream().mapToInt (m -> m).average().getAsDouble();
7     }
8 }
9
10
11 }
```

**Question: 122**

Given:

```
// line 1
List<String> fruits = new ArrayList<>(List.of("apple", "orange", "banana"));
fruits.replaceAll(function);
```

Which statement on line 1 enables this code fragment to compile?

- A. Function function = String::toUpperCase;
- B. UnaryOperator function = s -> s.toUpperCase();
- C. UnaryOperator<String> function = String::toUpperCase;
- D. Function<String> function = m -> m.toUpperCase();

**Answer: C**

Explanation:

```

1 import java.io.*;
2 import java.util.*;
3 import java.util.stream.Stream;
4 import java.util.function.Function;
5 import java.util.function.UnaryOperator;
6
7 class Hello {
8     public static void main(String[] args) {
9         UnaryOperator<String> function = String::toUpperCase;
10        List<String>fruits = new ArrayList<>(List.of("apple", "orange", "banana"));
11        fruits.replaceAll(function);
12    }
13 }
14
15
16 }
```

**Question: 123**

Given:

```

try {
    // line 1
    lines.map(l -> l.toUpperCase())
        .forEach (line --> {
            try {
                Files.write(Paths.get("outputFile_to_path"),
line.getBytes(),StandardOpenOption.CREATE);
            } catch (IOException e) {
                e.printStackTrace();
            }
        });
} catch (IOException e) {
    e.printStackTrace();
}

```

You want to obtain the Stream object on reading the file. Which code inserted on line 1 will accomplish this?

- A. var lines = Files.lines(Paths.get(INPUT\_FILE\_NAME));
- B. Stream lines = Files.readAllLines(Paths.get(INPUT\_FILE\_NAME));
- C. var lines = Files.readAllLines(Paths.get(INPUT\_FILE\_NAME));
- D. Stream<String> lines = Files.lines(INPUT\_FILE\_NAME);

**A**

---

**Answer: C**

---

### **Question: 124**

Given:

```

public class Main {
    public static void main(String[] args) {
        try (BufferedReader br = new BufferedReader(new InputStreamReader(System.in))) {
            String input = br.readLine();
            System.out.println ("Input String was: " + input);
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}

```

Which is true?

- A. System.out is the standard output stream. The stream is open only when System.out is called.
- B. System.in cannot reassign the other stream.
- C. System.out is an instance of java.io.OutputStream by default.
- D. System.in is the standard input stream. The stream is already open.

---

**Answer: D**

---

Reference: <https://www.geeksforgeeks.org/java-lang-system-class-jav/>

### ~~Question: 125~~

Given:

```
public class Employee {
    private String name;
    private LocalDate birthday;
    // the constructors, getters, and setters methods go here
}
```

and

```
List<Employee> roster = new ArrayList<>();
// ...
Predicate<Employee> y = (Employee e) -> e.getBirthday()
    .isBefore(IsoChronology.INSTANCE.date(1989, 1, 1));
Set<String> s1 = roster.stream()
// Line 1
```

Which code fragment on line 1 makes the s1 set contain the names of all employees born before January 1, 1989?

- A. `.collect(Collectors.partitioningBy(y))
 .get(true)
 .stream()
 .map(Employee::getName)
 .collect(Collectors.toCollection(TreeSet::new));`
- B. `.collect(Collectors.partitioningBy(y))
 .get(true)
 .map(Employee::getName)
 .collect(Collectors.toSet());`
- C. `.collect(Collectors.partitioningBy(y, Collectors.mapping(
 Employee::getName, Collectors.toSet())));`
- D. `.collect(Collectors.partitioningBy(y, Collectors.groupingBy(
 Employee::getName, Collectors.toCollection(TreeSet::new))));`

- A. Option A  
B. Option B  
C. Option C  
D. Option D

~~Answer: B~~

### ~~Question: 126~~

Given:

```

import java.util.List;
import java.util.function.BinaryOperator;
public class Main {
    public static void main(String... args) {
        List<Employee> list = List.of(new Employee("John", 80000.0), new Employee("Scott", 90000.0));
        double starts = 0.0;
        double ratio = 1.0;
        BinaryOperator<Double> bo = (a, b) -> a + b;
        double totalSalary = list.stream().map(e -> e.getSalary() * ratio).reduce(starts, bo);
        // line 1
        System.out.println("Total salary = " + totalSalary);
    }
}

class Employee {
    String name;
    double salary;
    public Employee(String name, double salary) {
        this.name = name;
        this.salary = salary;
    }
    public String getName() { return name; }
    public double getSalary() { return salary; }
}

```

Which statement is equivalent to line 1?

- A. double totalSalary = list.stream().map(e -> e.getSalary() \* ratio).reduce (bo).ifPresent (p -> p.doubleValue());
- B. double totalSalary = list.stream().mapToDouble(e -> e.getSalary() \* ratio).sum();
- C. double totalSalary = list.stream().map(Employee::getSalary \* ratio).reduce (bo).orElse(0.0);
- D. double totalSalary = list.stream().mapToDouble(e -> e.getSalary() \* ratio).reduce(starts, bo);

**Answer: C**

Explanation:

```

Employee.java * Main.java *
1 import java.util.List;
2 Employee.java <util.function.BinaryOperator;
3
4 public class Main {
5     public static void main (String... args) {
6         List<Employee> list = List.of(new Employee("John", 80000.0), new Employee("Scott", 90000.0));
7         double starts = 0.0;
8         double ratio = 1.0;
9         BinaryOperator<Double> bo = (a, b) -> a + b;
10        double totalSalary = list.stream().map(e -> e.getSalary() * ratio).reduce(starts, bo);
11        //line 1
12        System.out.println("Total salary = " + totalSalary);
13    }
14 }
15
16
Console 1
Total salary = 170000.0
Completed with exit code: 0

```

### Question: 127

Which interface in the java.util.function package will return a void return type?

- A. Supplier
- B. Predicate
- C. Function

D. Consumer

---

**Answer: D**

---

Reference: <https://www.geeksforgeeks.org/java-8-consumer-interface-in-java-with-examples/>

---

**Question: 128**

---

Given:

```
public class MyResource {  
    public MyResource () {  
    }  
    // Resource methods  
}
```

You want to use the myResource class in a try-with-resources statement. Which change will accomplish this?

- A. Extend AutoCloseable and override the close method.
- B. Implement AutoCloseable and override the autoClose method.
- C. Extend AutoCloseable and override the autoClose method.
- D. Implement AutoCloseable and override the close method.

---

**Answer: D**

---

Reference: <https://stackabuse.com/the-try-with-resources-statement-in-java/>

---

**Question: 129**

---

Given:

```
@Target(ElementType.METHOD)  
@Retention(RetentionPolicy.RUNTIME)  
public @interface AuthorInfo {  
    String author() default "";  
    String date();  
    String[] comments() default {};  
}
```

Which two are correct? (Choose two.)

- A. @AuthorInfo(date="1-1-2020", comments={ null })  
 public class Hello {  
 public void func() {}  
}
- B. public class Hello {  
 @AuthorInfo (date="1-1-2020, comments="Hello")  
 public void func() {}  
}
- C. public class Hello {  
 @AuthorInfo  
 public void func() {}  
}
- D. @AuthorInfo(date="1-1-2020")  
 public class Hello {  
 public void func() {}  
}
- E. public class Hello {  
 @AuthorInfo(date="1-1-2020", author="Gandhi", comments={ "world" })  
 public void func () {}  
}

- A. Option A  
**B. Option B**  
 C. Option C  
 D. Option D

B E

---

**Answer: CD**

**Question: 130**

**B**

Given:

```
public class Main {
    public static void main(String[] args) {
        try {
            Path path = Paths.get("/u01/work/filestore.txt");
            boolean result = Files.deleteIfExists(path);
            if(result) System.out.println(path + "is deleted.");
            else System.out.println(path + "is not deleted.");
        } catch(IOException e) {
            System.out.println("Exception");
        }
    }
}
```

Assume the file on path does not exist. What is the result?

- A. The compilation fails.  
**B. /u01/work/filestore.txt is not deleted.**  
 C. Exception

D. /u01/work/filestore.txt is deleted.



**Answer: A**

Explanation:

The screenshot shows a Java code editor with the following code:

```

import java.util.*;
import java.io.*;
import java.util.stream.Stream;
import java.lang.String;
import java.util.List;
import java.util.function.BinaryOperator;
import java.util.Scanner;

public class sample {
    public static void main (String[] args)
    {
        try{
            Path path = Paths.get("/u01/work/filestore.txt");
            boolean result = Files.deleteIfExists(path);
            if(result) System.out.println(path + " is deleted.");
            else System.out.println(path + " is not deleted.");
        } catch (IOException e)
        {System.out.println("Exception");}
    }
}

```

A modal dialog box is displayed with the text: "www.codiva.io says There are compilation errors. Run previous working version?". It has "OK" and "Cancel" buttons.

### Question: 131

Given:

```

public class Tester {
    static class Person implements /* line 1 */ {
        private String name;
        Person(String name) { this.name = name; }
        /* line 2 */
    }
    public static void main(String[] args) {
        Person[] people = {new Person("Joe"),
                           new Person("Jane"),
                           new Person("John")};
        Arrays.sort(people);
        for(Person person: people) {
            System.out.println(person.name);
        }
    }
}

```

You want the code to produce this output:

John

Joe  
Jane

Which code fragment should be inserted on line 1 and line 2 to produce the output?

- A. Insert Comparator<Person> on line 1.

Insert

```
public int compare(Person p1, Person p2) {  
    return p1.name.compare(p2.name);  
}
```

on line 2.

- B. Insert Comparator<Person> on line 1.

Insert

```
public int compareTo(Person person) {  
    return person.name.compareTo(this.name);  
}
```

on line 2.

- C. Insert Comparable<Person> on line 1.

Insert

```
public int compare(Person p1, Person p2) {  
    return p1.name.compare(p2.name);  
}
```

on line 2.

- D. Insert Comparator<Person> on line 1.

Insert

```
public int compare(Person person) {  
    return person.name.compareTo(this.name);  
}
```

on line 2.



---

**Answer: B**

---

Reference: <https://www.coursehero.com/file/p320ss6/Override-public-int-compareTo-Person-other-Compare- this-objects-name-to-others/>



### **Question: 132**

Given:

```

class CustomType<T> {
    public <T> int count(T[] anArray, T element) {
        int count = 0;
        for(T e : anArray) {
            if (e.equals(element)) ++count;
        }
        return count;
    }
}

```

and

```

public class Test extends CustomType {
    public static void main(String[] args) {
        String[] words = {"banana", "orange", "apple", "lemon"};
        Integer[] numbers = {1, 2, 3, 4, 5};
        CustomType type = new CustomType();
        CustomType<String> stringType = new CustomType<>();
        System.out.println(stringType.count(words, "apple"));
        System.out.println(type.count(words, "apple"));
        System.out.println(type.count(numbers, 3));
    }
}

```

What is the result?

A. A NullPointerException is thrown at run time.

B. The compilation fails.

C. 1

Null

null

D. 1

1

1

E. A ClassCastException is thrown at run time.

D

---

**Answer: B**

Explanation:

```

Console 4
Error: Could not find or load main class CustomType
Caused by: java.lang.ClassNotFoundException: CustomType

```

### Question: 133

Which statement about a functional interface is true?

- A. It must be defined with the public access modifier.
- B. It must be annotated with @FunctionalInterface.
- C. It is declared with a single abstract method.
- D. It is declared with a single default method.
- E. It cannot have any private methods and static methods.

### Answer: C

Reference: <https://www.geeksforgeeks.org/functional-interfaces-java/>

### Question: 134

Given:

```
public class Main {  
    public static void main(String[] args) {  
        try(BufferedReader in = new BufferedReader(new InputStreamReader(System.in))) {  
            System.out.print("Input: ");  
            String input = in.readLine();  
            System.out.println("Echo: " + input);  
        } catch (IOException e) {  
            e.printStackTrace();  
        }  
    }  
}
```

And the command:

```
java Main Helloworld
```

What is the result ?

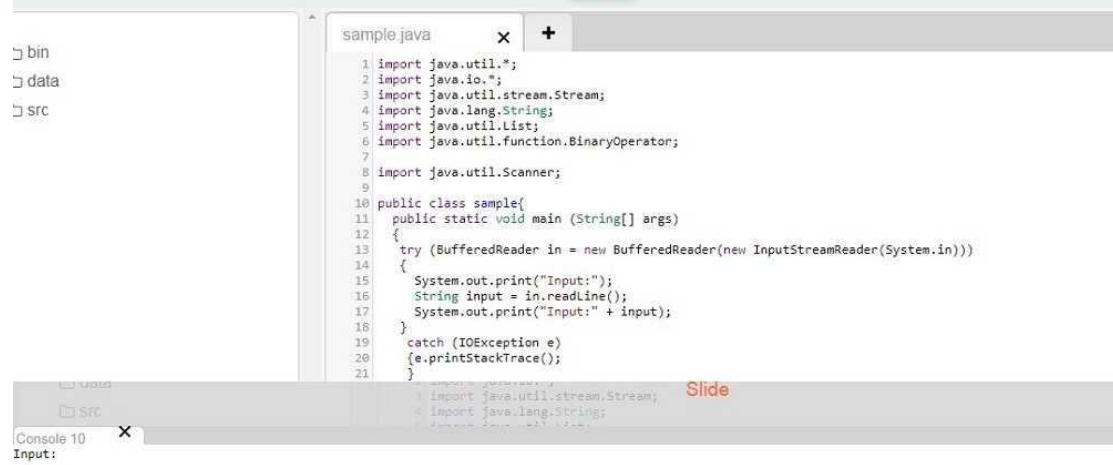
- A. Input: Echo:
- B. Input: Helloworld Echo: Helloworld
- C. Input:
- Then block until any input comes from System.in.
- D. Input:  
Echo: Helloworld
- E. A NullPointerException is thrown at run time.

---

**Answer: C**

---

Explanation:



The screenshot shows an IDE interface. On the left is a tree view with nodes for bin, data, and src. In the center is a code editor window titled 'sample.java' containing the following Java code:

```

1 import java.util.*;
2 import java.io.*;
3 import java.util.stream.Stream;
4 import java.lang.String;
5 import java.util.List;
6 import java.util.function.BinaryOperator;
7
8 import java.util.Scanner;
9
10 public class sample{
11     public static void main (String[] args)
12     {
13         try (BufferedReader in = new BufferedReader(new InputStreamReader(System.in)))
14         {
15             System.out.print("Input:");
16             String input = in.readLine();
17             System.out.print("Input:" + input);
18         }
19         catch (IOException e)
20         {e.printStackTrace();}
21     }
}

```

To the right of the code editor is a 'Console 10' window with the text 'Input:'.

---

**Question: 135**

---

Given:

```
public class X {  
}
```

and

```
public final class Y extends X {  
}
```

What is the result of compiling these two classes?

- A. The compilation fails because there is no zero args constructor defined in class X.
- B. The compilation fails because either class X or class Y needs to implement the `toString()` method.
- C. The compilation fails because a final class cannot extend another class.
- D. The compilation succeeds.



---

**Answer: B**

---

Explanation:

```

13
14 public class Main {
15     public static void main (String[] args) {
16         public class X {
17
18     }
19
20     public final class Y extends X {
21
22     }
23
24

```

**Question: 136**

Which code is correct?

- A. Runnable r = "Message" -> System.out.println();
- B. Runnable r = () -> System.out::print;
- C. Runnable r = () -> {System.out.println("Message");};
- D. Runnable r = -> System.out.println("Message");
- E. Runnable r = {System.out.println("Message")};

**Answer: C**

Reference: <https://www.oracle.com/technical-resources/articles/java/architect-lambdas-part1.html>

**Question: 137**

Given:

```

public class FunctionalInterfaceTest {
    public static void main(String[] args) {
        List fruits = Arrays.asList("apple", "orange", "banana");
        Consumer<String> c = System.out::print;
        Consumer<String> output = c.andThen(x -> System.out.println(": " + x.toUpperCase
()));
        fruits.forEach(output);
    }
}

```

What is the output?

- A. :APPLE:ORANGE:BANANA
- appleorangepbanana B.
- :APPLE:ORANGE:BANANA
- C. APPLE:apple ORANGE:orange BANANA:banana
- D. appleorangepbanana
- :APPLE:ORANGE:BANANA
- E. apple:APPLE orange:ORANGE banana:BANANA**

---

**Answer: E**

---

Explanation:

```
1 import java.util.*;
2 import java.io.*;
3 import java.lang.Thread;
4 import java.util.ArrayList;
5 import java.util.LinkedList;
6 import java.util.List;
7 import java.util.function.Consumer;
8
9 - public class FunctionalInterfaceTest {
10 + public static void main (String[] args) {
11     List fruits = Arrays.asList("apple", "orange", "banana");
12     Consumer<String> c = System.out::print;
13     Consumer<String> output = c.andThen(x -> System.out.println(": " + x.toUpperCase()));
14
15     fruits.forEach(output);
16
17 }
18 }
```

Execute Mode, Version, Inputs & Arguments

JDK 11.0.4     Interactive    Stdin Inputs

CommandLine Arguments

▶ Execute ... [ ]

Result

CPU Time: 0.26 sec(s), Memory: 32984 kilobyte(s)

```
apple:APPLE
orange:ORANGE
banana:BANANA
```

Question: 138

0

Given:  

```
public class Test {  
    public static void doThings() throws GeneralException {  
        try {  
            throw new RuntimeException("Something happened");  
        } catch (Exception e) {  
            throw new SpecificException(e.getMessage());  
        }  
    }  
    public static void main(String args[]) {  
        try{  
            Test.doThings();  
        } catch (Exception e) {  
            System.out.println(e.getMessage());  
        }  
    }  
}  
class GeneralException /* line 1 */ {  
    public GeneralException(String s) { super(s); }  
}  
class SpecificException /* line 2 */ {  
    public SpecificException(String s) { super(s); }  
}
```

Which option should you choose to enable the code to print Something happened?

- A. Add extends GeneralException on line 1. Add extends Exception on line 2.
- B. Add extends SpecificException on line 1. Add extends GeneralException on line 2.
- C. Add extends Exception on line 1. Add extends Exception on line 2.
- D. Add extends Exception on line 1.  
Add extends GeneralException on line 2.

---

**Answer: D**

---

Explanation:

```
1 import java.util.*;
2 import java.io.*;
3 import java.lang.Thread;
4 import java.util.ArrayList;
5 import java.util.LinkedList;
6 import java.util.List;
7
8 public class Test {
9
10    public static void doThings() throws GeneralException {
11        try{
12            throw new RuntimeException("Something happened");
13        } catch (Exception e) {
14            throw new SpecificException (e.getMessage());
15        }
16    }
17
18
19    public static void main(String args[]) {
20        try{
21            Test.doThings();
22        }catch (Exception e) {
23            System.out.println(e.getMessage());
24        }
25    }
26    class GeneralException extends Exception {
27        public GeneralException(String s) { super(s); }
28    }
29    class SpecificException extends GeneralException {
30        public SpecificException(String s) { super(s);}
31    }
32 }
```

**Question: 139**

Given:

```
List<Reader> dataFiles = new ArrayList<>();
File indexFile = new File("MyIndex.idx");
try (BufferedReader indexReader =
      new BufferedReader(new FileReader(indexFile))) {
    for(String file = indexReader.readLine(); file != null;
        file = indexReader.readLine()) {
        BufferedReader dataReader = new BufferedReader (
            new FileReader(new File(file))); // Line 1
        dataFiles.add(dataReader); // Line 2
        processData(dataReader); // Line 3
    }
} catch (IOException ex) {
    ...
} finally {
    for(Reader r : dataFiles) {
        try {
            r.close();
        } catch (IOException ex) {
            ...
        } // Line 4
    }
}
```

What will secure this code from a potential Denial of Service condition?

- A. After Line 4, add indexReader.close().
- B. On Line 3, enclose processData(dataReader) with try with resources.
- C. After Line 3, add dataReader.close().
- D. On Line 1, use try with resources when opening each dataReader.
- E. Before Line 1, check the size of dataFiles to make sure it does not exceed a threshold.



---

**Answer: B**

---

### **Question: 140**

A company has an existing sales application using a Java 8 jar file containing packages:

```
com.company.customer;
com.company.customer.orders;
com.company.customer.info;
com.company.sales;
com.company.sales.leads;
com.company.sales.closed;
com.company.orders;
```

```
com.company.orders.pending;  
com.company.orders.shipped.
```

To modularize this jar file into three modules, customer, sales, and orders, which module-info.java would be correct?

A)

```
module com.company.customer {  
    opens com.company.customer;  
}  
module com.company.sales{  
    opens com.company.sales;  
}  
module com.company.orders {  
    opens com.company.orders;  
}
```

B)

```
module com.company.customer {  
    exports com.company.customer;  
}  
module com.company.sales{  
    exports com.company.sales;  
}  
module com.company.orders{  
    exports com.company.orders;  
}
```

C)

```
module com.company.customer {  
    requires com.company.customer;  
}  
module com.company.sales{  
    requires com.company.sales;  
}  
module com.company.orders {  
    requires com.company.orders;  
}
```

D)

```
module com.company.customer {  
    provides com.company.customer;  
}  
module com.company.sales{  
    provides com.company.sales;  
}  
module com.company.orders {  
    provides com.company.orders;  
}
```

- A. Option A
- B. Option B**
- C. Option C
- D. Option D

B

---

**Answer: C**

---

Reference: <https://developer.ibm.com/tutorials/java-modularity-3/>

---

**Question: 141**

---

Given:

```
String originalPath = "data\\projects\\a-project\\..\\..\\another-project";  
Path path = Paths.get(originalPath);  
System.out.print(path.normalize());
```

What is the result?

- A. data\another-project**
- B. data\projects\a-project\another-project
- C. data\\projects\\a-project\\..\\..\\another-project
- D. data\projects\ a-project\..\\..\\another-project

D

---

**Answer: D**

---

Explanation:

```

1 import java.util.*;
2 import java.io.*;
3 import java.nio.file.*;
4
5 public class Test {
6
7     public static void main(String[] args) {
8         String originalPath = "data\\projects\\a-project\\.\\.\\.\\another-project";
9         Path path = Paths.get(originalPath);
10        System.out.print(path.normalize());
11    }
12 }
```

Execute Mode, Version, Inputs & Arguments

JDK 11.0.4

Interactive

Stdin Inp

CommandLine Arguments

▶ Execute ...

Result

CPU Time: 0.19 sec(s), Memory: 31984 kilobyte(s)

**data\projects\a-project\..\..\another-project**

## Question: 142

Given:

```

public class Main {
    public static void main(String[] args) {
        Consumer consumer = msg -> System.out::print; // line 1
        consumer.accept("Hello Lambda !");
    }
}
```

This code results in a compilation error.

Which code should be inserted on line 1 for a successful compilation?

- A. Consumer consumer = msg -> { return System.out.print(msg); };
- B. Consumer consumer = var arg -> {System.out.print(arg);};
- C. Consumer consumer = (String args) -> System.out.print(args);
- D. Consumer consumer = System.out::print;

---

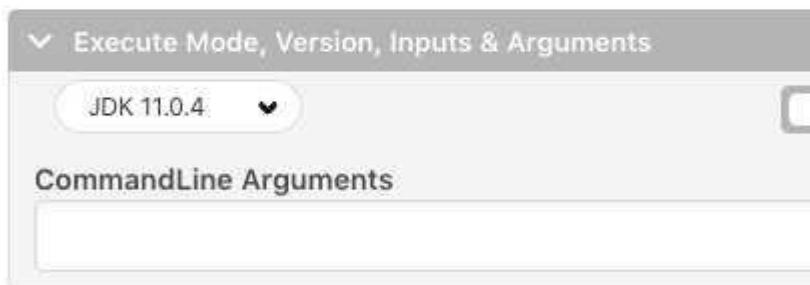
**Answer: D**

---

Explanation:

```

1 import java.util.*;
2 import java.io.*;
3 import java.nio.file.*;
4 import java.util.List;
5 import java.util.function.Consumer;
6
7 public class Main {
8
9     public static void main(String[] args) {
10         Consumer consumer = System.out::print;
11         consumer.accept("Hello Lambda !");
12     }
13 }
```



### Result

CPU Time: 0.16 sec(s), Memory: 32896 kilobyte(s)

Hello Lambda !

---

### Question: 143

Given:

```

int arr[][] = {{5,10},{8,12},{9,3}};
long count = Stream.of(arr)
                    .flatMapToInt(IntStream::of)
                    .map(n -> n + 1)
                    .filter(n -> (n % 2 == 0))
                    .peek(System.out::print)
                    .count();
System.out.println(" " + count);
```

What is the result?

- A. 6910 3
- B. 10126 3
- C. 3
- D. 6104 3

---

**Answer: D**

---

Explanation:

```
1 import java.util.*;
2 import java.io.*;
3 import java.lang.Thread;
4 import java.util.ArrayList;
5 import java.util.LinkedList;
6 import java.util.List;
7 import java.util.function.Consumer;
8 import java.util.stream.Stream;
9 import java.util.stream.IntStream;
10
11
12 public class Main {
13
14     public static void main(String[] args) {
15         int arr[][] = {{5,10}, {8,12}, {9,3}};
16         long count = Stream.of(arr)
17             .flatMapToInt(IntStream::of)
18             .map(n -> n + 1)
19             .filter(n -> (n % 2 == 0))
20             .peek(System.out::print)
21             .count();
22         System.out.println(" " + count);
23     }
24 }
```

**Execute Mode, Version, Inputs & Arguments**

JDK 11.0.4

CommandLine Arguments

**Result**

CPU Time: 0.32 sec(s), Memory: 34220 kilobyte(s)

**6104 3****Question: 144**

Which is a proper JDBC URL?

- A. jdbe.mysql.com://localhost:3306/database

- B. `http://localhost.mysql.com:3306/database`
- C. `http://localhost mysql.jdbc:3306/database`
- D. `jdbc:mysql://localhost:3306/database`

---

**Answer: D**

Reference: <https://vladmihalcea.com/jdbc-driver-connection-url-strings/>

---

### **Question: 145**

Given:

```
public class SerializedMessage implements Serializable {  
    String message;  
    LocalDateTime createdTime;  
    transient LocalDateTime updatedDateTime;;  
    SerializedMessage(String message) {  
        this.message = message;  
        this.createdTime = LocalDateTime.now();  
    }  
    private void readObject (ObjectInputStream in) {  
        try {  
            in.defaultReadObject();  
            this.updatedDateTime = LocalDateTime.now();  
        } catch (IOException | ClassNotFoundException e) {  
            e.printStackTrace();  
        }  
    }  
}
```

When is the `readObject` method called?

- A. before this object is deserialized
- B. after this object is deserialized C. before this object is serialized
- D. The method is never called.
- E. after this object is serialized

F

---

**Answer: B**

Reference: <https://www.oracle.com/technical-resources/articles/java/javaserial.html>

---

### **Question: 146**

Given:

```
1. void insertionSort(int values[]) {
2.     int n = values.length;
3.     for (int j = 1; j < n; j++) {
4.         int tmp = values[j];
5.         int i = j - 1;
6.         while ( (i > -1) && (values[i] > tmp) ) {
7.             values[i + 1] = values[i];
8.             i--;
9.         }
10.        values[i + 1] = tmp;
11.    }
12. }
```

After which line can we insert assert  $i < 0 \mid\mid \text{values}[i] \leq \text{values}[i + 1]$ ; to verify that the values array is partially sorted?

- A. after line 8
- B. after line 6
- C. after line 5
- D. after line 10

---

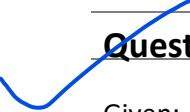
**Answer: B**

---

Explanation:

```
1 import java.util.*;
2 import java.io.*;
3 import java.lang.Thread;
4 import java.util.ArrayList;
5 import java.util.LinkedList;
6 import java.util.List;
7 import java.util.function.Consumer;
8 import java.util.stream.Stream;
9 import java.util.stream.IntStream;
10
11
12 public class Main {
13
14
15     void insertionSort (int values[]) {
16         int n = values.length;
17         for (int j = 1; j < n; j++) {
18             int tmp = values[j];
19
20             int i = j - 1;
21             assert i < 0 || values[i] <= values[i + 1];
22             while ((i > 0) && (values[i] > tmp) ) {
23                 values[i + 1] = values[i];
24                 i--;
25             }
26             values[i + 1] = tmp;
27         }
28     }
29 }
30 }
```

---



### Question: 147

Given:

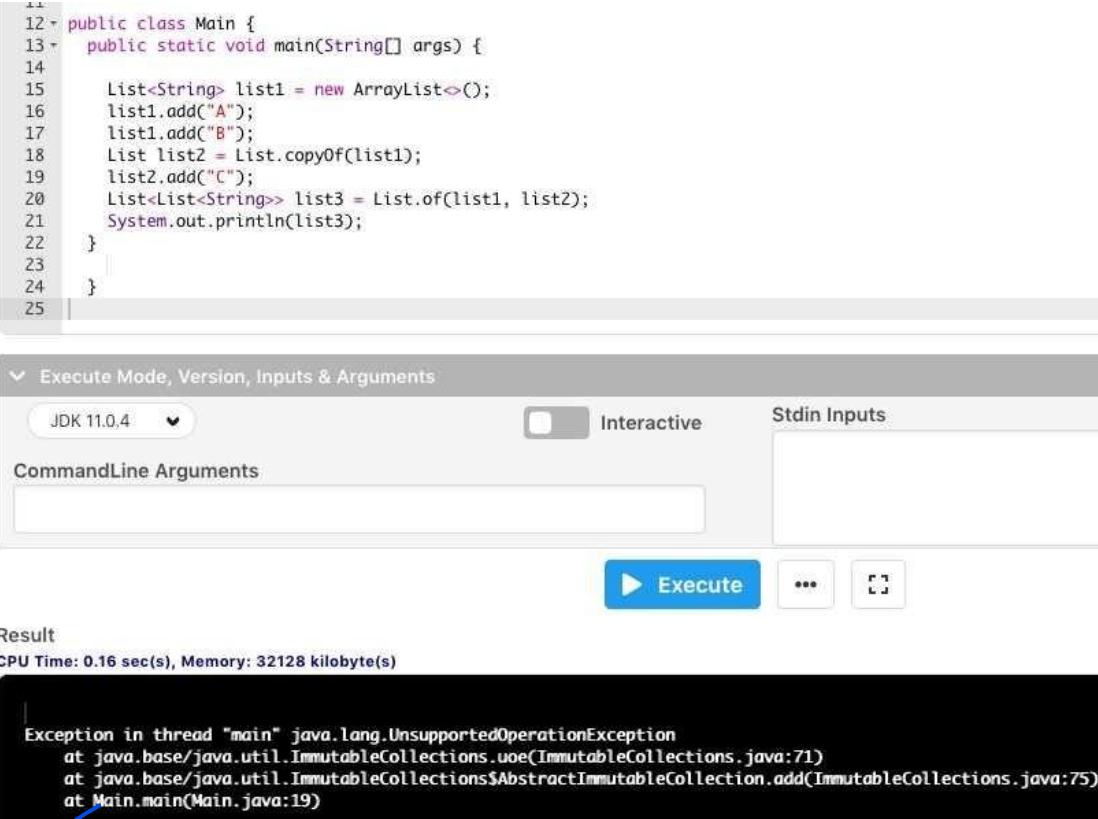
```
List<String> list1 = new
ArrayList<>(); list1.add("A");
list1.add("B"); List list2 =
List.copyOf(list1); list2.add("C");
List<List<String>> list3 = List.of(list1,
list2); System.out.println(list3); What is
the result?
```

- A. [[A, B],[A, B]]
- B. An exception is thrown at run time.

- C. [[A, B], [A, B, C]]  
 D. [[A, B, C], [A, B, C]]

**Answer: B**

Explanation:



```

12+ public class Main {
13+   public static void main(String[] args) {
14
15     List<String> list1 = new ArrayList<>();
16     list1.add("A");
17     list1.add("B");
18     List list2 = List.copyOf(list1);
19     list2.add("C");
20     List<List<String>> list3 = List.of(list1, list2);
21     System.out.println(list3);
22   }
23
24 }
  
```

Execute Mode, Version, Inputs & Arguments

JDK 11.0.4    Interactive    Stdin Inputs

CommandLine Arguments

**Execute**    ...    ☰

Result  
CPU Time: 0.16 sec(s), Memory: 32128 kilobyte(s)

```

Exception in thread "main" java.lang.UnsupportedOperationException
  at java.base/java.util.ImmutableCollections$ue(ImmutableCollections.java:71)
  at java.base/java.util.ImmutableCollections$AbstractImmutableCollection.add(ImmutableCollections.java:75)
  at Main.main(Main.java:19)
  
```

**Question: 148**

Given:

```

1.  public class Secret {
2.      String[] names;
3.      public Secret(String[] names) {
4.          this.names = names;
5.      }
6.      public String[] getNames() {
7.          return names;
8.      }
9.  }
  
```

Which three actions implement Java SE security guidelines? (Choose three.)

- A. Change line 7 to return names.clone();.
- B. Change line 4 to this.names = names.clone();.
- C. Change the getNames() method name to get\$Names().
- D. Change line 6 to public synchronized String[] getNames() {}.
- E. Change line 2 to private final String[] names;.
- F. Change line 3 to private Secret(String[] names) {}.
- G. Change line 2 to protected volatile String[] names;.

A B E

Answer: EFG

### Question: 149

Given:

```
Integer[] intArray = {2, 1, 3, 4, 5};  
List<Integer> list =  
new ArrayList<>(Arrays.asList (intArray));  
list.parallelStream()  
.forEach(e -> System.out.print(e + " "));
```

Which two are correct? (Choose two.)

- A. The output will be exactly 2 1 3 4 5.
- B. The program prints 1 4 2 3, but the order is unpredictable.
- C. Replacing forEach() with forEachOrdered(), the program prints 2 1 3 4 5, but the order is unpredictable.
- D. Replacing forEach() with forEachOrdered(), the program prints 1 2 3 4 5.
- E. Replacing forEach() with forEachOrdered(), the program prints 2 1 3 4 5.

B E

Answer: BD

Explanation:

```
8+ public class Secret {  
9+     public static void main(String[] args) {  
10    Integer[] intArray = {1, 2, 3, 4, 5};  
11    List<Integer> list =  
12    new ArrayList<>(Arrays.asList(intArray));  
13    list.parallelStream()  
14        .forEachOrdered(e -> System.out.print(e + " "));  
15    }  
16 }
```



### Result

CPU Time: 0.32 sec(s), Memory: 37040 kilobyte(s)

```
1 2 3 4 5
```

### Question: 150

Given the contents:

MessageBundle.properties file:

message=Hello

MessageBundle\_en.properties file:

message=Hello (en)

MessageBundle\_US.properties file:

message=Hello (US)

MessageBundle\_en\_US.properties file:

message=Hello (en\_US)

MessageBundle\_fr\_FR.properties file:

message=Bonjour

and the code fragment:

```
Locale.setDefault(Locale.FRANCE);
Locale currentLocale = new Locale.Builder().setLanguage("en").build();

ResourceBundle messages = ResourceBundle.getBundle("MessageBundle", currentLocale);
System.out.println(messages.getString("message"));
```

Which file will display the content on executing the code fragment?

- A. MessageBundle\_en\_US.properties
- B. MessageBundle\_en.properties**
- C. MessageBundle\_fr\_FR.properties
- D. MessageBundle\_US.properties
- E. MessageBundle.properties

---

**Answer: C**

---

Reference: <https://www.javatpoint.com/ResourceBundle-class>

### **Question: 151**

Given:

```
public class Main {
    public static void main(String[] args) {
        var numbers = List.of(1,2,3,4,5,6,7,8,9,10);
        Optional<Integer> result = numbers.stream().filter(x -> x % 3 != 0).reduce((i, j)
-> i + j);
        result.ifPresent(System.out::print); // line 1
```

Which is true about line 1?

- A. If the value is not present, a NoSuchElementException is thrown at run time.
- B. It always executes the System.out::print statement.
- C. If the value is not present, a NullPointerException is thrown at run time.
- D. If the value is not present, nothing is done.

---

**Answer: D**

---

Explanation:

```
1 import java.util.*;
2 import java.io.*;
3 import java.lang.Thread;
4 import java.util.ArrayList;
5 import java.util.LinkedList;
6 import java.util.List;
7 import java.util.function.Consumer;
8 import java.util.stream.Stream;
9 import java.util.stream.IntStream;
10 import java.util.Optional;
11
12
13 * public class Main {
14 *     public static void main(String[] args) {
15 *         var numbers = List.of(1,2,3,4,5,6,7,8,9,10);
16 *         Optional<Integer> result = numbers.stream().filter (x -> x % 3 != 0).reduce( (i, j) -> i + j);
17 *     }
18 * }
19 }
```

Result  
CPU Time: 0.18 sec(s), Memory: 33380 kilobyte(s)

JDoodle in Action.... Running the program...

## Question: 152

Given:

```
List<String> list1 = new LinkedList<String>();
Set<String> hs1 = new HashSet<String>();
String[] v = {"a", "b", "c", "b", "a"};
for (String s: v) {
    list1.add(s);
    hs1.add(s);
}
System.out.print(hs1.size() + " " + list1.size() + " ");
HashSet hs2 = new HashSet(list1);
LinkedList list2 = new LinkedList(hs1);
System.out.print(hs2.size() + " " + list2.size());
```

What is the result?

- A. 3 5 3 3
- B. 3 3 3 3
- C. 3 5 3 5
- D. 5 5 3 3

---

**Answer: A**

Explanation:

```

1 import java.util.*;
2 import java.io.*;
3 import java.lang.Thread;
4 import java.util.ArrayList;
5 import java.util.LinkedList;
6 import java.util.List;
7 import java.util.function.Consumer;
8 import java.util.stream.Stream;
9 import java.util.stream.IntStream;
10 import java.util.Optional;
11
12
13 * public class Main {
14 *     public static void main(String[] args) {
15         List<String> list1 = new LinkedList<String>();
16         Set<String> hs1 = new HashSet<String>();
17         String[] v = {"a", "b", "c", "b", "a"};
18 *     for (String s: v) {
19         list1.add(s);
20         hs1.add(s);
21     }
22     System.out.println(hs1.size() + "" + list1.size() + "|");
23     HashSet hs2 = new HashSet(list1);
24     LinkedList list2 = new LinkedList(hs1);
25     System.out.print(hs2.size() + "" + list2.size());
26
27 }
28 }
```

**Result**

CPU Time: 0.28 sec(s), Memory: 36204 kilobyte(s)

35  
33

**Question: 153**

Given:

```

public class Main {
    class Student {                                // line 1
        String classname;
        Student(String classname) {                // line 2
            this.classname = classname;
        }
    }
    public static void main(String[] args) {
        var student = new Student("Biology"); // line 3
    }
}
```

Which two independent changes will make the Main class compile? (Choose two.)

- A. Move the entire Student class declaration to a separate Java file, Student.java.
- B. Change line 2 to public Student(String classname).
- C. Change line 1 to public class Student {.
- D. Change line 3 to Student student = new Student("Biology");.
- E. Change line 1 to static class Student {.

*NE*

---

**Answer: BD**

Explanation:

```

1 import java.util.*;
2 import java.io.*;
3 import java.lang.Thread;
4 import java.util.ArrayList;
5 import java.util.LinkedList;
6 import java.util.List;
7 import java.util.function.Consumer;
8 import java.util.stream.Stream;
9 import java.util.stream.IntStream;
10 import java.util.Optional;
11
12
13 - public class Main {
14 -     class Student {
15 -         String classname;
16 -         public Student (String classname) {
17 -             this.classname = classname;
18 -         }
19 -     }
20 -     }
21 -     public static void main (String[] args) {
22 -         var student = new Student ("Biology");
23 -     }
24 }
```

### Question: 154

Given:

```
public class Employee {
    private String name;
    private String locality;
    /* the constructor, getter and setter methods code goes here */
}
```

and:

```

8. List<Employee> roster = new ArrayList<>();
9. long empCount = roster.stream()
10. /* insert code here */
11. System.out.print(empCount);

```

Which code, when inserted on line 10, prints the number of unique localities from the roster list?

- A. .map(Employee::getLocality)  
.distinct()  
.count();
- B. map(e -> e.getLocality())  
.count();
- C. .map(e -> e.getLocality())  
.collect(Collectors.toSet())  
.count();
- D. .filter(Employee::getLocality)  
.distinct()  
.count();

---

### Answer: D

---

Reference: <https://developer.android.com/reference/android/location/Address>

---

### Question: 155

---

Given the Person class with age and name along with getter and setter methods, and this code fragment:

```

List<Person> persons = new ArrayList(List.of(new Person(44,"Tom"),
                                              new Person(40,"Aman"),
                                              new Person(40,"Peter")));
persons.sort(Comparator.comparing((Person::getAge))
            .thenComparing(Person::getName)
            .reversed());
persons.forEach(p1->System.out.print(" "+p1.getName()));

```

What will be the result?

- A. Aman Tom Peter
- B. Tom Aman Peter
- C. Aman Peter Tom
- D. Tom Peter Aman

---

### Answer: C

---

---

**Question: 156**

---

Which three guidelines are used to protect confidential information? (Choose three.)

- A. Limit access to objects holding confidential information.
- B. Clearly identify and label confidential information.
- C. Manage confidential and other information uniformly.
- D. Transparently handle information to improve diagnostics.
- E. Treat user input as normal information.
- F. Validate input before storing confidential information.
- G. Encapsulate confidential information.

(Af-67?)

---

**Answer: ADF**

---

Reference: <https://danielkvist.net/code/java-secure-coding-guidelines>

---

**Question: 157**

---

Given:

```
public static void main(String[] args) {
    try (Reader reader1 = new FileReader("File1.txt");
        Reader reader2 = new FileReader("File2.txt");
        Reader reader3 = new FileReader("File3.txt")) {

    } catch (IOException ex) {
        Logger.getLogger(Main.class.getName()).log(Level.SEVERE, null, ex);
    }
    // Line 1
    System.out.println("Done");
}
```

When run and all three files exist, what is the state of each reader on Line 1?

- A. All three readers are still open.
- B. All three readers have been closed.
- C. The compilation fails.
- D. Only reader1 has been closed.

b

---

**Answer: C**

---

---

**Question: 158**

---

Given the code fragment:

```
var pool = Executors.newFixedThreadPool(5);
Future outcome = pool.submit(() -> 1);
```

Which type of lambda expression is passed into submit()?

- A. java.lang.Runnable
- B. java.util.function.Predicate
- C. java.util.function.Function
- D. java.util.concurrent.Callable

---

**Answer: D**

---

Reference:

<https://www.codota.com/code/java/methods/java.util.concurrent.Executors/newFixedThreadPool>

---

**Question: 159**

---

Which two statements set the default locale used for formatting numbers, currency, and percentages? (Choose two.)

- A. Locale.setDefault(Locale.Category.FORMAT, "zh-CN");
- B.** Locale.setDefault(Locale.Category.FORMAT, Locale.CANADA\_FRENCH);
- C.** Locale.setDefault(Locale.SIMPLIFIED\_CHINESE);
- D. Locale.setDefault("en\_CA");
- E. Locale.setDefault("es", Locale.US);

bc

---

**Answer: BD**

---

Reference: <https://www.oracle.com/technical-resources/articles/javase/locale.html>

---

**Question: 160**

---

Given:

```
public class Confidential implements Serializable{
    private String data;

    public Confidential(String data) {
        this.data = data;
    }
}
```

Which two are secure serialization of these objects? (Choose two.)

- A. Define the serialPersistentFields array field.
- B.** Declare fields transient.
- C. Implement only readResolve to replace the instance with a serial proxy and not writeReplace.
- D. Make the class abstract.

- E. Implement only writeReplace to replace the instance with a serial proxy and not readResolve.

**B E**

**Answer: AC**

### Question: 161

A bookstore's sales are represented by a list of Sale objects populated with the name of the customer and the books they purchased.

```
public class Sale { private
String customer; private
List<Book> items;
// constructor, setters and getters not shown
}
public class Book {
private String name;
private double price;
// constructor, setters and getters not shown
}
```

Given a list of Sale objects, tList, which code fragment creates a list of total sales for each customer in ascending order?

- A. 

```
List<String> totalByUser = tList.stream()
.collect(flatMapping(t -> t.getItems().stream(),
groupingBy(Sale::getCustomer,
summingDouble(Book::getPrice))))
.entrySet().stream()
.sorted(Comparator.comparing(Entry::getValue))
.collect(mapping(e -> e.getKey() + ":" + e.getValue(),toList()));
```
  - B. 

```
List<String> totalByUser = tList.stream()
.collect(groupingBy(Sale::getCustomer,
flatMapping(t -> t.getItems().stream(),
summingDouble(Book::getPrice))))
.sorted(Comparator.comparing(Entry::getValue))
.collect(mapping(e -> e.getKey() + ":" + e.getValue(),toList()));
```
  - C. 

```
List<String> totalByUser = tList.stream()
.collect(groupingBy(Sale::getCustomer,
flatMapping(t -> t.getItems().stream(),
summingDouble(Book::getPrice))))
.entrySet().stream()
.sorted(Comparator.comparing(Entry::getValue))
.collect(mapping(e -> e.getKey() + ":" + e.getValue(),toList()));
```
  - D. 

```
List<String> totalByUser = tList.stream()
.collect(flatMapping(t -> t.getItems().stream(),
groupingBy(Sale::getCustomer,
summingDouble(Book::getPrice))))
.sorted(Comparator.comparing(Entry::getValue))
.collect(mapping(e -> e.getKey() + ":" + e.getValue(),toList));
```
- A. Option A  
B. Option B  
C. Option C  
D. Option D

---

**Answer: C**

---

---

**Question: 162**

---

Which two safely validate inputs? (Choose two.)

- A. Delegate numeric range checking of values to the database.
- B. Accept only valid characters and input values.
- C. Use trusted domain-specific libraries to validate inputs.
- D. Assume inputs have already been validated.
- E. Modify the input values, as needed, to pass validation.

---

**Answer: AB**

---

Reference: <https://stackoverflow.com/>

---

**Question:s/3059333**

---

/validating-input-using-java-util-scanner

Question: 163

Consider this method declaration:

```
void setSessionUser(Connection conn, String user) throws SQLException {
    Statement stmt = conn.createStatement();
    String sql = <EXPRESSION>;
    stmt .execute();
}
```

- A) "SET SESSION AUTHORIZATION " + user
- B) "SET SESSION AUTHORIZATION " + stmt.enquotelIdentifier(user)

Is A or B the correct replacement for <EXPRESSION> and why?

- A. A, because it sends exactly the value of user provided by the calling code.
- B. B, because enquoting values provided by the calling code prevents SQL injection.
- C. A and B are functionally equivalent.
- D. A, because it is unnecessary to enclose identifiers in quotes.
- E. B, because all values provided by the calling code should be enquoted.

---

**Answer: A**

---

Reference:

[https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&ved=2ahUKEwj7ycO80fLoAhVHPcAKHcoLC9cQFjADegQIAxAB&url=ftp%3A%2F%2Fftp.software.ibm.com%2Fps%2Fproducts%2Fdb2%2Finfo%2Fvr9%2Fpdf%2Fletter%2Fen\\_US%2Fdb2s2e90.pdf&usg=AOvVaw2VqpeEh5HpbeXfaOOB5Lec](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&ved=2ahUKEwj7ycO80fLoAhVHPcAKHcoLC9cQFjADegQIAxAB&url=ftp%3A%2F%2Fftp.software.ibm.com%2Fps%2Fproducts%2Fdb2%2Finfo%2Fvr9%2Fpdf%2Fletter%2Fen_US%2Fdb2s2e90.pdf&usg=AOvVaw2VqpeEh5HpbeXfaOOB5Lec)

---

**Question: 164**

---

Which three annotation uses are valid? (Choose three.)

- A. Function<String, String> func = (@NonNull x) -> x.toUpperCase();
- B. var v = "Hello" + (@Interned) "World"
- C. Function<String, String> func = (var @NonNull x) -> x.toUpperCase();
- D. Function<String, String> func = (@NonNull var x) -> x.toUpperCase();
- E. var myString = (@NonNull String) str;
- F. var obj = new @Interned MyObject();

*DEF*

---

**Answer: ACF**

---

---

**Question: 165**

---

Which two statements correctly describe capabilities of interfaces and abstract classes? (Choose two.)

- A. Interfaces cannot have protected methods but abstract classes can.
- B. Both interfaces and abstract classes can have final methods.
- C. Interfaces cannot have instance fields but abstract classes can.
- D. Interfaces cannot have static methods but abstract classes can.
- E. Interfaces cannot have methods with bodies but abstract classes can.

---

**Answer: AC**

---

Reference: <https://www.guru99.com/interface-vs-abstract-class-java.html>

---

**Question: 166**

---

Given:

```
public static void main(String[] args) {
    final List<String> fruits =
        List.of("Orange", "Apple", "Lemmon", "Raspberry");
    final List<String> types =
        List.of("Juice", "Pie", "Ice", "Tart");
    final var stream =
        IntStream.range(0, Math.min(fruits.size(), types.size()))
            .mapToObj((i) -> fruits.get(i) + " " + types.get(i));
    stream.forEach(System.out::println);
}
```

What is the result?

- A. Orange Juice
- B. The compilation fails.

- C. Orange Juice Apple Lemmon Ice Raspberry Tart  
D. The program prints nothing.

---

**Answer: C**

---

Explanation:

```
12+ public class Person {  
13+     public static void main (String[] args) {  
14         final List<String> fruits =  
15             List.of("Orange", "Apple", "Lemmon", "raspberry");  
16         final List<String> types =  
17             List.of("Juice", "Pie", "Ice", "Tart");  
18         final var stream =  
19             IntStream.range(0, Math.min(fruits.size(), types.size()))  
20                 .mapToObj ((i) -> fruits.get(i) + " " + types.get(i));  
21         stream.forEach(System.out::println);  
22     }  
23 }  
24 }
```

Result

compiled and executed in 1.227 sec(s)

```
Orange Juice  
Apple Pie  
Lemmon Ice  
raspberry Tart
```

---

### Question: 167

---

Which interface in the java.util.function package can return a primitive type?

- A. ToDoubleFunction
- B. Supplier
- C. BiFunction
- D. LongConsumer

---

**Answer: A**

---

Reference: <http://java.boot.by/ocjp8-upgrade-guide/ch02s07.html>

---

**Question: 168**

---

Given:

```
enum QUALITY {  
    A(100), B(75), C(50);  
    int percent;  
    private QUALITY(int percent) {  
        this.percent = percent;  
    }  
}
```

and

```
checkQuality(QUALITY.A);
```

and

```
void checkQuality(QUALITY q) {  
    switch (q) {  
        case /* Insert code here */ :  
            System.out.println("Best");  
            break;  
        default :  
            System.out.println("Not best");  
            break;  
    }  
}
```

Which code fragment can be inserted into the switch statement to print Best?

- A. QUALITY.A.ValueOf()
- B. A
- C. A.toString()
- D. QUALITY.A

---

**Answer: B**

---

---

**Question: 169**

---

Given:

```
LocalDate d1 = LocalDate.of(1997,2,7);  
DateTimeFormatter dtf =  
DateTimeFormatter.ofPattern( /*insert code here*/ );  
System.out.println(dtf.format (d1));
```

Which pattern formats the date as Friday 7th of February 1997?

- A. "eeee dd+'th of'+ MMM yyyy"
- B. "eeee dd'th of' MMM yyyy"
- C. "eeee d+"th of"+ MMMM yyyy"
- D. "eeee d'th of' MMMM yyyy"

①

---

**Answer: B**

---

---

**Question: 170**

Which two statements independently compile? (Choose two.)

- A. List<? super Short> list = new ArrayList<Number>();
- B. List<? super Number> list = new ArrayList<Integer>();
- C. List<? extends Number> list = new ArrayList<Byte>();
- D. List<? extends Number> list = new ArrayList<Object>();
- E. List<? super Float> list = new ArrayList<Double>();

---

**Answer: AC**

---

Explanation:

```
1 import java.util.*;
2 import java.text.*;
3 import java.io.*;
4 import java.lang.Thread;
5 import java.util.ArrayList;
6 import java.util.LinkedList;
7 import java.util.List;
8 import java.util.function.Consumer;
9 import java.util.stream.Stream;
10 import java.util.stream.IntStream;
11 import java.util.Optional;
12
13 public class Intel {
14     public static void main (String[] args) {
15         List<? extends Number> list = new ArrayList<Byte>()
16     }
17 }
```

Execute Mode, Version, Inputs & Arguments

JDK 11.0.4

Result

compiled and executed in 1.173 sec(s)



**Question: 171**

Given this enum declaration:

```
1. enum Letter {
2.     ALPHA(100), BETA(200), GAMMA(300);
3.     int v;
4.     Letter(int v) { this.v = v; }
5.     /* Insert code here */
6. }
```

Examine this code:

```
System.out.println(Letter.values()[1]);
```

What code should be written at line 5 for this code to print 200?

- A. public String toString() { return String.valueOf(ALPHA.v); }
- B. public String toString() { return String.valueOf(Letter.values()[1]); }
- C. public String toString() { return String.valueOf(v); }
- D. String toString() { return "200"; }

---

**Answer: C**

---

Explanation:

```

13 - public class Main {
14 -     enum Letter {
15         ALPHA(100), BETA(200), GAMMA(300);
16         int v;
17         Letter(int v) { this.v = v; }
18         public String toString() { return String.valueOf(v); }
19
20
21
22     }
23 -     public static void main (String[] args) {
24     System.out.println(Letter.values() [1]);
25     }
26 }
27
28

```

Result

compiled and executed in 1.099 sec(s)

200

### **Question: 172**

Given the code fragment:

```

Path source = Paths.get("/repo/a/a.txt");
Path destination = Paths.get("/repo");
Files.move(source, destination); // line 1
Files.delete(source); // line 2

```

Assuming the source file and destination folder exist, what is the result?

- A. A java.nio.file.FileAlreadyExistsException is thrown on line 1.
- B. A java.nio.file.NoSuchFileException is thrown on line 2.
- C. A copy of /repo/a/a.txt is moved to the /repo directory and /repo/a/a.txt is deleted.
- D. a.txt is renamed repo.

---

**Answer: C**

---

---

**Question: 173**

---

Given:

```
List<String> longlist = List.of("Hello","World","Beat");
List<String> shortlist = new ArrayList<>();
```

Which code fragment correctly forms a short list of words containing the letter "e"?

- A. 

```
longList.stream()
    .filter(w -> w.indexOf('e') != -1)
    .parallel()
    .forEach(w -> shortList.add(w));
```
  - B. 

```
longList.parallelStream()
    .filter(w -> w.indexOf('e') != -1)
    .forEach(w -> shortList.add(w));
```
  - C. 

```
shortList = longList.stream()
    .filter(w -> w.indexOf('e') != -1)
    .parallel()
    .collect(Collectors.toList());
```
  - D. 

```
longList.stream()
    .filter(w -> w.indexOf('e') != -1)
    .parallel()
    .collect(shortlist);
```
- A. Option A
  - B. Option B
  - C. Option C
  - D. Option D

---

**Answer: C**

---

---

**Question: 174**

---

Given: jdeps -jdkinternals

C:\workspace4\SimpleSecurity\jar\classes.jar

Which describes the expected output?

- A. jdeps lists the module dependencies and the package names of all referenced JDK internal APIs. If any are found, the suggested replacements are output in the console.

- B. jdeps outputs an error message that the -jdkinternals option requires either the -summary or the verbose options to output to the console.
- C. The -jdkinternals option analyzes all classes in the .jar and prints all class-level dependencies.
- D. The -jdkinternals option analyzes all classes in the .jar for class-level dependencies on JDK internal APIs. If any are found, the results with suggested replacements are output in the console.

---

**Answer: A**

---

Explanation:

-jdkinternals option analyzes all classes in the .jar for class-level dependencies on JDK internal APIs. If any are found, the results with suggested replacements are output in the console.

---

**Question: 175**

---

Given:

```
public class Main {  
    public static void main(String[] args) {  
        List l = new ArrayList();  
        l.add("hello");  
        l.add("world");  
        print(l);  
    }  
    private static void print(List<String>... args) {  
        for (List<String> str : args) {  
            System.out.println (str);  
        }  
    }  
}
```

Which annotation should be used to remove warnings from compilation?

- A. @SuppressWarnings on the main and print methods
- B. @SuppressWarnings("unchecked") on main and @SafeVarargs on the print method
- C. @SuppressWarnings("rawtypes") on main and @SafeVarargs on the print method
- D. @SuppressWarnings("all") on the main and print methods

---

**Answer: B**

---

**Explanation:**

```

13  @SuppressWarnings("unchecked")
14  public class Main {
15
16  public static void main(String[] args) {
17
18      List l = new ArrayList();
19      l.add("Hello");
20      l.add("world");
21      print(l);
22
23  }
24
25  private static void print(List<String>... args) {
26      for (List<String> str : args) {
27          System.out.println(str);
28      }
29  }
30  }
31  @SafeVarargs
32 }
```

---

**Question: 176****Given:**

```

public class Employee {
    private String name;
    private String neighborhood;
    private LocalDate birthday;
    private int salary;
}
```

**and**

```

List<Employee> roster = new ArrayList<>(...);
Map<String, Optional<Employee>> m = roster.stream()
// Line 1
```

Which code fragment on line 1 makes the m map contain the employee with the highest salary for each neighborhood?

A)

```
.collect(Collectors.maxBy(Employee::getSalary,
    Collectors.groupingBy(Comparator.comparing(e -> e.getNeighborhood()))));
```

B)

```
.collect(Collectors.groupingBy(Employee::getNeighborhood,
    Collectors.maxBy(Comparator.comparing(Employee::getSalary))));
```

C)

```

.collect(Collectors.groupingBy(e -> e.getNeighborhood(),
    Collectors.maxBy((x, y) -> y.getSalary() - x.getSalary())));
D)
.collect(Collectors.maxBy((x, y) -> y.getSalary() - x.getSalary(),
    Collectors.groupingBy(Employee::getNeighborhood)));

```

- A. Option A
- B. Option B
- C. Option C**
- D. Option D



**Answer: D**

### **Question: 177**

Given TripleThis.java:

```

6. import java.util.function.*;
7. public class TripleThis {
8.     public static void main(String[] args) {
9.         Function tripler = x -> { return (Integer) x * 3; };
10.        TripleThis.printValue(tripler, 4);
11.    }
12.    public static <T> void printValue(Function f, T num) {
13.        System.out.println(f.apply(num));
14.    }
15. }

```

Compiling TripleThis.java gives this compiler warning:

Note: TripleThis.java uses unchecked or unsafe operations.

Which two replacements done together remove this compiler warning?

- A. Replace line 9 with function<Integer> tripler = x-> - { return (Integer) X \* 3 ; }.
- B. Replace line 12 with public static void printValue function<Integer> f, int num) {}.
- C. Replace line 12 with public static int printValue function<Integer, Integer>, f, T num {}.
- D. Replace line 12 with public static <T> void printValue (Function<T, T> f, T num ) {}, E. Replace line 9

with function<Integer>, Integer> = X -> { return (integer) x \* 3; }. **Answer: AC**

**D E**

---

**Question: 178**

---

Given the content:

```
MessagesBundle.properties file:  
username = Username  
password = Password
```

and

```
MessagesBundle_fr_FR.properties file:  
username = Utilisateur  
password = Le passe
```

and

```
MessagesBundle_ru.properties file:  
username = Пользователь  
password = Пароль
```

and the code fragment:

```
public class Test {  
    public static void main(String[] args) {  
        Locale.setDefault(Locale.FRANCE);  
        ResourceBundle msg = ResourceBundle.getBundle("MessageBundle", new Locale("ru"));  
        System.out.println("User " + msg.getString("username"));  
        System.out.println("Pass " + msg.getString("password"));  
    }  
}
```

What Is the result?

A)

```
User = Пользователь  
Pass = Пароль
```

B)

The compilation fails.

C)

A MissingResourceException is thrown at runtime.

D)

```
User = Utilisateur  
Pass = Le passe
```

E)

User Username

A. Option A

B. Option B

C. Option C

D. Option D

E. Option

---

**Answer: DE**

---

**Question: 179**

Given the code fragment:

```
public class Main {
    public static void main(String... args) {
        List<String> list1 = new ArrayList<>(
            List.of("Plane", "Automobile", "Motorcycle"));
        List<String> list2 = new ArrayList<>(List.copyOf(list1));

        list1.sort((String item1, String item2) -> item1.compareTo(item2));
        list2.sort((String item1, String item2) -> item1.compareTo(item2));
        System.out.println(list1.equals(list2));
    }
}
```

What is the result?

- A. A java.lang.UnsupportedOperationException is thrown.
- B. True
- C. False
- D. A java.lang.NullPointerException is thrown.

B

**Answer: A**

**Question: 180**

Given:

```
public final class X {
    private String name;
    public String getName() {
        return name;
    }
    public void setName(String name) {
        this.name = name;
    }
    public String toString() { return getName(); }
}
```

and

```
public class Y extends X{
    public Y(String name) {
        super();
        setName(name);
    }
    public static void main (String... args) {
        Y y = new Y("HH");
        System.out.println(y);
    }
}
```

What is the result?

- A. The compilation fails.
- B. Y@<< hashCode >>

- C. Null
- D. HH

---

**Answer: B**

---

**Question: 181**

```
public class Employee {  
    private String name;  
    private String neighborhood;  
    // the constructors, setters, and getter methods go here  
}
```

and

```
List<Employee> roster = List.of(new Employee("John", "West town"),  
                                new Employee("Ray", "South town"),  
                                new Employee("Tom"),  
                                new Employee("Kenny", "West town"));
```

A)

```
Map<String, List<Employee>> e3 =  
    roster.stream()  
        .collect(Collectors.groupingBy(  
            e -> Optional.ofNullable(e.getNeighborhood())  
            .get()  
        ));
```

B)

```
Map<String, List<Employee>> e3 =  
    roster.stream()  
        .collect(Collectors.groupingBy(  
            e -> Optional.ofNullable(e.getNeighborhood())  
            .get()  
        ));
```

C)

```
Map<String, List<Employee>> e1 =  
    roster.stream()  
        .collect(Collectors.groupingBy(  
            e -> Optional.ofNullable(e.getNeighborhood())  
        ));
```

D)

```
Map<Object, List<Employee>> e2 =  
    roster.stream()  
        .collect(Collectors.groupingBy(  
            e -> Optional.ofNullable(e.getNeighborhood())  
        ));
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

---

**Answer: D**

---

**Question: 182**

Given the code fragment:

```
8. public class Test {  
9.     private final int x = 1;  
10.    static final int y;  
11.    public Test() {  
12.        System.out.print(x);  
13.        System.out.print(y);  
14.    }  
15.    public static void main(String args[]) {  
16.        new Test();  
17.    }  
18. }
```

What is the result?

- A. 1
- B. The compilation fails at line
- C. 10
- D. The compilation fails at line 16.
- E. The compilation fails at line 13.

---

**Answer: C**

---

E

---

**Question: 183**

---

```
public class Electronics extends Product {  
    public Electronics(double price) {  
        super(price);  
    }  
}  
  
and  
  
public class Plushy extends Product {  
    public Plushy(double price) {  
        super(price);  
    }  
}  
  
and  
  
public class PriceChecker <T extends Product> {  
    private T product;  
    public PriceChecker(T product) {  
        this.product = product;  
    }  
    public boolean isPriceEqual(/* line 1 */) {  
        return this.product.getPrice() == prod.product.getPrice();  
    }  
    public static void main(String... args) {  
        PriceChecker<Electronics> a = new PriceChecker<>(new Electronics(1000.00));  
        PriceChecker<Plushy> b = new PriceChecker<>(new Plushy(1.0));  
        System.out.println(a.isPriceEqual(b));  
    }  
}
```

What change will cause the code to compile successfully?

- A. Insert PriceChecker (?) prod on line 1.
- B. Insert PriceChecker <> prod on line 1.
- C. Insert PriceChecker <Electronics> prod on line 1.
- D. Insert PriceChecker <Plushy extends Products> prod on line 1.

---

**Answer: A**

---

---

**Question: 184**

---

Given:

```
public class Main {  
    private String[] strings = {"ABCDEFGHIJKLMNPQRSTUVWXYZ",  
                                "abcdefghijklmnopqrstuvwxyz", "0123456789"};  
    public void write(String filename){  
        // line 1  
        for (String str: strings) {  
            ByteBuffer buffer = ByteBuffer.wrap(str.getBytes());  
            fileChannel.write(buffer);  
        }  
    }catch(IOException e){  
        e.printStackTrace();  
    }  
}  
public static void main(String[] args) {  
    Main test = new Main();  
    test.write("file_to_path");  
}
```

You want to obtain the Filechannel object on line 1.

Which code fragment will accomplish this?

A)

```
try (FileChannel fineChannel = Channels.newChannel(new FileOutputStream(filename));) {
```

B)

```
try(FileChannel fileChannel = new FileOutputStream(filename).getChannel();) {
```

C)

```
try (FileChannel fileChannel = new FileOutputStream(new FileChannel(filename));) {
```

D)

```
try(FileChannel fileChannel = new FileChannel(new FileOutputStream(filename));) {
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

---

**Answer: A**

---

---

**Question: 185**

```
public class X {  
    protected void print(Object obj) {  
        System.out.println(obj);  
    }  
    public final void print(Object... objects) {  
        for(Object object : objects) {  
            print(object);  
        }  
    }  
    public void print(Collection collection) {  
        collection.forEach(System.out::println);  
    }  
}
```

and

```
public class Y extends X {  
    public void print(Object obj) {  
        System.out.print("[" + obj + "]");  
    }  
    public void print(Object... objects) {  
        for(Object object : objects) {  
            System.out.println("[" + object + "]");  
        }  
    }  
    public void print(Collection collection) {  
        print(collection.toArray());  
    }  
}
```

```

public class X {
    protected void print(Object obj) {
        System.out.println(obj);
    }
    public final void print(Object... objects) {
        for(Object object : objects) {
            print(object);
        }
    }
    public void print(Collection collection) {
        collection.forEach(System.out::println);
    }
}

```

and

```

public class Y extends X {
    public void print(Object obj) {
        System.out.print("[" + obj + "]");
    }
    public void print(Object... objects) {
        for(Object object : objects) {
            System.out.println("[" + object + "]");
        }
    }
    public void print(Collection collection) {
        print(collection.toArray());
    }
}

```

Why does this compilation fail?

- A. The method Y. print (object) does not call the method super.print (object)
- B. The method x. print (object) is not accessible to Y.
- C. In method x. print (Collection), system. Out :: prints is an invalid Java identifier.
- D. The method print (object) and the method print (object...) are duplicates of each other.
- E. The method Y. print (object...) cannot override the final method x.print (object....).

F

---

**Answer: D**

---

### **Question: 186**

Which method throws an exception for not-a-number and infinite input values?

A)

```

static float validate1(String s) throws IllegalArgumentException {
    return Float.parseFloat(s);
}

```

B)

```

static float validate3(String s, float min, float max) throws IllegalArgumentException {
    float f = Float.parseFloat(s);
    if (!Float.isFinite(f) || f < min || f > max) {
        throw new IllegalArgumentException();
    }
    return f;
}

C)
static float validate2(String s, float min, float max) throws IllegalArgumentException {
    float f = Float.parseFloat(s);
    if (f < min || f > max) {
        throw new IllegalArgumentException();
    }
    return f;
}

D)
static float validate4(String s, float min, float max) throws IllegalArgumentException {
    float f = Float.parseFloat(s);
    if (Float.isFinite(f) && f < min && f > max) {
        throw new IllegalArgumentException();
    }
    return f;
}

```

- A. Option A
- B. Option B
- C. Option C
- D. Option D



---

**Answer: A**

---

### **Question: 187**

There is a copyServiceAPI that has the org.copyservice.spi.Copy interface  
To use this service in a module, which module- info.java would be correct?

A)

```
module CopyConsumer {
    requires CopyServiceAPI;
    uses org.copyservice.spi.Copy;
}
```

B)

```
module CopyConsumer {
    requires transitive org.copyservice.spi.Copy;
}
```

C)

```
module CopyConsumer {
    requires org.copyservice.spi.Copy;
}
```

D)

```
module CopyConsumer {
    uses CopyServiceAPI;
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D




---

**Answer: C**

---

### **Question: 188**

Given:

```
List<Integer> numbers = List.of(2, 3, 0, 8, 1, 9, 5, 7, 6, 4);
int sum = numbers.stream().reduce(0, (n, m) -> n + m); // line 1
```

You wants to make the reduction operation parallelized.

Which two modifications will accomplish this?

- A. Replace line 1 with int sum = numbers. Stream (). Interate (0, a -> a+1. Reduce (0, (n m) -> n+m);
- B. Replace line 1with int sum = numbers. ParallelStream () . Reduce (0, (n, m ) -> n + m);
- C. Replace line 1 with int sum = numbers. Parallel ( ). Stream () . Reduce (0, (n, m ) -> n + m);
- D. Replace line 1with int sum = number. Stream () . flatMap (a -> a) .reduce (0, (n, m) -> n +m ); E.
- Replace line 1with int sum = number.stream. parallel ( ). Reduce (0, (n, m) -> n + m);

---

**Answer: AD**

---

### **Question: 189**

Given:

```
public class Tester {
    public static void main(String[] args) {
        String s = "hat at store";
        int x = s.indexOf("at");
        s.substring(x + 3);
        x = s.indexOf("at");
        System.out.println(s + " " + x);
    }
}
```

What is the result?

- A. An indexOutOfBoundsException is thrown at runtime.
- B. At once 0
- C. Hat at store 4
- D. At once 1
- E. Hat at store 1

---

**Answer: E**

---

**Question: 190**

Given:

```
public class GameObject {  
    public Object[] move(int x, int y) {  
        System.out.println("Move GameObject");  
        return new Integer[] { x + 10, y + 10 };  
    }  
}
```

and

```
public class Avatar extends GameObject {  
    public Object[] move(Number x, Number y) {  
        System.out.println("Move Character");  
        return super.move(x.intValue(), y.intValue());  
    }  
    public static void main(String... args) {  
        var character = new Avatar();  
        character.move(10.0, 10.0);  
        character.move(10, 10);  
    }  
}
```

What is the result?

A)

```
Move GameObject  
Move GameObject
```

B)

```
Move Character  
Move GameObject  
Move GameObject
```

C)

```
Move GameObject
```

D)

```
Move GameObject  
Move Character  
Move GameObject
```

A. Option A

B. Option B

C. Option C

D. Option D

---

**Answer: A**

---

---

**Question: 191**

---

Given the code fragment:

```
int i = 0;
for( ; i<10; i++){
    System.out.print(++i + " ");
}
```

What is the result?

- A. 13 5 7 9
- B. 1 3 5 7 9 11
- C. 2 4 6 B 10
- D. 2 4 6 8



---

**Answer: B**

---

---

**Question: 192**

---

A company has an existing Java app that includes two Java 8 jar files, sales-3.10.jar and clients-10.2.jar.

The jar file ,sales -8, 10, jar reference packages in clients -10.2 jar, but clients-10.2 jar does not reference packages in sales -8.10, jar.

They have decided to modularize clients-10.2.jar.

Which module-info.java file would work for the new library version clients-10.3.jar?

A)

```
module com.company.clients{
    uses com.company.clients;
}
```

B)

```
module com.company.clients{
    requires com.company.clients;
}
```

C)

```
module com.company.clients {
    exports com.company.clients.Client;
}
```

D)

```
module com.company.clients {
    exports com.company.clients;
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

---

**Answer: C**

---

**Question: 193**

```

private String name;
public Thing(String name) {
    this.name = name;
}
public String toString() {
    return name;
}
}

```

and

```

public class Tester {
    public static void main(String[] args) {
        Thing[] things = processThings();
        /* line 1 */
        for (Thing t: things) {
            System.out.println(t);
        }
    }
    public static Thing[] processThings() {
        Thing[] things = new Thing[3];
        things[0] = new Thing("Hat");
        things[1] = new Thing("Rat");
        things[2] = things[0];
        things[0] = new Thing("Cat");
        things[1] = things[2];
        return things;
    }
}

```

How many Thing objects are eligible for garbage collection in line 1?

---

- A. 3
- B. 2
- C. 0
- D. 1**
- E. 4

---

**Answer: D**

---

**Question: 194**

Given the Customer table structure:

- ID Number Primary Key
- NAME Text Nullable

Given code fragment:

```
12. PreparedStatement stmt = con.prepareStatement("INSERT INTO CUSTOMER VALUES (?,?)");
13. stmt.setInt(1, 42);
14. /* Insert code here */
15. int n = stmt.executeUpdate();
```

Which statement inserted on line 14 sets NAME column to a NULL value?

- A. Stmt.setNull(2, java.sql.Types, VARCHAR);
- B. Stmt.setNull(2 string, class);
- C. Stmt.setNull(2, null);
- D. Stmt.setNull(2, java.lang, string);

---

**Answer: A**

---

**Question: 195**

Given:

```
class MyPersistenceData {
    String str;
    private void methodA() {
        System.out.println("methodA");
    }
}
```

You want to implement the jav

a. lo, serializable interface to the MypersisteneData class.

Which method should be overriden?

- A. The readExternal and writeExternal method
- B. The readExternal method
- C. The writeExternal method
- D. nothing**

①

---

**Answer: A**

---

**Question: 196**

Given:

```

class ConSuper {
    protected ConSuper(){
        this(2);
        System.out.print("3");
    }
    protected ConSuper(int a){
        System.out.print(a);
    }
}

```

and

```

public class ConSub extends ConSuper{
    ConSub(){
        this(4);
        System.out.print("1");
    }
    ConSub(int a) {
        System.out.print(a);
    }
    public static void main (String[] args){
        new ConSub(4);
    }
}

```

What is the result?

- A. 2134
- B. 234**
- C. 2341
- D. 214




---

**Answer: A**

---

### **Question: 197**

Given:

```

class Item {
    public String name; public int count;
    public Item(String name, int count) {
        this.name = name; this.count = count;
    }
}

```

and the code fragment:

```

public class Test {
    public static void main(String[] args) {
        var items = List.of(new Item("A", 10),new Item("B", 2),
                           new Item("C", 12),new Item("D", 5),new Item("E", 6));
        // line 1
        System.out.println("There is an item for which the variable count is below zero.");
    }
}

```

You want to examine the items list it contains an item for which the variable count is below zero. Which code fragment at line 1 accomplish this?

- A. If (items.stream () .filter (i -> count < 0) .findFirst () ) {
- B. If (items.stream () .filter (i -> count < 0) .findAny () ) {
- C. If (items.stream () .allmatch (i -> count < 0) < 0) {
- D. If (items.stream () .anyMatch (i -> count < 0) < 0) {

D

---

**Answer: A**

---

### Question: 198

Given:

```
public class Plant { }
```

and

```
public class Tulip extends Plant { }
```

and

```
public class Garden {  
    private static Plant plant;  
    public static void main(String[] args) {  
        plant = new Tulip();  
        feed(plant);  
        feed(plant);  
    }  
    public static void feed(Plant p) {  
        if (p instanceof Tulip) {  
            System.out.println("Take extra care");  
        }  
        p = null;  
    }  
}
```

What is the result?

- A. Take extra care
- B. The program prints nothing.
- C. Take extra care
- D. An exception is thrown at runtime

C

---

**Answer: D**

---

### Question: 199

Given the code fragment:

```
public class City {  
    public static void main(String[] args) {  
        String[] towns = {"boston", "paris", "bangkok", "oman"};  
        Comparator<String> ms = (a, b) -> b.compareTo(a);  
        Arrays.sort(towns, ms);  
        System.out.println(Arrays.binarySearch(towns, "oman", ms));  
    }  
}
```

What is the result?

- A. 2
- B. -1
- C. 1
- D. -3

C

---

**Answer: A**

---

### **Question: 200**

Given the code fragment:

```
Consumer<String> c1 = arg -> System.out.println(arg);  
c1.accept("c1 accepted");  
Consumer<String> c2 = arg -> System.out.println(arg);  
c2.accept("c2 accepted");  
c2.andThen(c1).accept("after then");  
c2.accept("c2 accepted again");
```

What is the result?

A)

c1 accepted  
c2 accepted  
and followed by an exception

B)

c1 accepted  
c2 accepted  
after then  
c1 accepted  
c2 accepted again

C)

c1 accepted  
c2 accepted  
after then  
c2 accepted again

D)

c1 accepted  
c2 accepted  
after then  
after then  
c2 accepted again

- A. Option A
- B. Option B
- C. Option C
- D. Option D

D

---

**Answer: C**

---

**Question: 201**

---

Given:

```
import java.util.*;

public class Main {
    static Map<String, String> map = new HashMap<>();
    static List<String> keys =
        new ArrayList<>(List.of("S", "P", "Q", "R"));
    static String[] values =
        {"senate", "people", "of", "rome" };

    static {
        for(var i = 0; i < keys.size(); i++) {
            map.put(keys.get(i), values[i]);
        }
    }

    public static void main(String[] args) {
        keys.clear();
        values = new String[0];
        System.out.println("Keys: " + keys.size() +
                           " Values: " + values.length +
                           " Map: " + map.size());
    }
}
```

What is the result?

- A. Keys: 4 Values: 4 Map: 0
- B. Keys: 4 Values: 4 Map: 4
- C. The compilation fails.
- D. Keys: 0 Values: 0 Map:
- E. Keys: 0 Values: 0 Map: 0

---

**Answer: B**

---

**Question: 202**

---

Given the code fragment:

```

StringBuilder txt1 = new StringBuilder("PPQRRRSTT");
int i = 0;
a:
while (i < txt1.length()) {
    char x = txt1.charAt(i);
    int j = 0;
    i++;
    b:
    while (j < txt1.length()) {
        char y = txt1.charAt(j);
        if (i != j && y == x) {
            txt1.deleteCharAt(j);
            // line 1
        }
        j++;
    }
}
System.out.println(txt1);

```

Which two statement inserted independently at line 1 enable this code to print PRRT?

- A. i--;
- B. continue b;**
- C. break b;
- D. j--;
- E. continue a;**
- F. break a ;

*BE*  
\_\_\_\_\_  
**Answer: F**

### Question: 203

Given:

```

public class Menu {
    enum Machine{
        AUTO("Truck"), MEDICAL("Scanner");
        private String type;
        private Machine(String type) {
            this.type = type;
        }
        private void setType(String type) {           // line 1
            this.type = type;
        }
        private String getType() {
            return type;
        }
    }
    public static void main(String[] args) {
        Machine.AUTO.setType("Sedan");           // line 2
        for (Machine p : Machine.values()) {
            System.out.println(p + ": " + p.getType()); // line 3
        }
    }
}

```

- A) An exception is thrown at run time.  
B)

```
AUTO: Sedan  
MEDICAL: Scanner
```

- C) The compilation fails due to an error on line 2.  
D) The compilation fails due to an error on line 1.  
E)

```
AUTO: Truck  
MEDICAL: Scanner
```

- F)  
The compilation fails due to an error on line 3.

- A. Option A  
**B. Option B**  
C. Option C  
D. Option D  
E. Option E  
F. Option F



---

**Answer: A**

---

### **Question: 204**

---

Given:

```
public interface AdaptorFirst {  
    void showFirst();  
}
```

Which three classes successfully override showFirst ()?

A)

```
public abstract class MainClass implements AdaptorFirst {  
    public String showFirst(){  
        return "first";  
    }  
}
```

B)

```
public abstract class MainClass implements AdaptorFirst {  
    public void showFirst(){  
        System.out.println("first");  
    }  
}
```

C)

```
public class MainClass implements AdaptorFirst {  
    void showFirst();  
}
```

D)

```

public class MainClass implements AdaptorFirst {
    private void showFirst(){
        System.out.println("first");
    }
}

E)
public abstract class MainClass implements AdaptorFirst {
    public abstract void showFirst();
}

F)
public class MainClass implements AdaptorFirst {
    public void showFirst(){
        System.out.println("first");
    }
}

```

---

- A. Option A
- B. Option B**
- C. Option C
- D. Option D
- E. Option E
- F. Option F

QEF

**Answer: C**



### Question: 205

```

class Worker {
    private boolean finished = false;
    public void consumeResource(Resource resource){
        while(!resource.isReady()){
            System.out.println("waiting for a resource");
            try {
                Thread.sleep(1000);
            } catch (InterruptedException e) {
                e.printStackTrace();
            }
        }
        setFinished(true);
    }
    public boolean isFinished() {
        return finished;
    }
    private void setFinished(boolean finished) {
        this.finished = finished;
    }
}

```

And the code fragment:

```
Resource resource = new Resource();
Worker worker = new Worker();
Thread t1 = new Thread(() -> resource.processWork(worker));
Thread t2 = new Thread(() -> worker.consumeResource(resource));

t1.start();
t2.start();
```

Which situation will occur on code fragment execution?

- A. Livelock
- B. Deadlock
- C. Race Condition
- D. Starvation

B

~~Answer D~~

---

### Question: 206

---

Given the code fragment:

```
char[][] arrays = {{'g', 'j'}, {'h', 'k'}, {'i', 'l'}};
for (char[] xx : arrays) {
    for (char yy : xx) {
        System.out.print(yy);
    }
    System.out.print(" ");
}
```

What is the result?

- A. An ArrayIndexOutOfBoundsException is thrown at runtime.
- B. The compilation fails.
- C. gh ij kl
- D. gj hk il E. ghi jkl**

D

**Answer: A**

---

---

### Question: 207

---

Given the code fragment:

```

public class Test {
    class L extends Exception { }
    class M extends L { }
    class N extends RuntimeException { }
    public void p() throws L { throw new M(); }
    public void q() throws N { throw new N(); }
    public static void main(String[] args) {
        try {
            Test t = new Test();
            t.p();
            t.q();
        } /* line 1 */
        System.out.println("Exception caught");
    }
}

```

What change on line 1 will make this code compile?

- A. Add catch (L | N e).
- B. Add catch (L | M N e).
- C. Add catch (L e).**
- D. Add catch (N | L | M e).
- E. Add catch (M | L e).

---

**Answer: C**

---

### **Question: 208**

Given the code fragment:

```

public class Main {
    public static void main(String[] args) {
        try {
            Path path = Paths.get("/u01/work");
            // line 1
            System.out.println(attributes.isDirectory());
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}

```

You want to examine whether path is a directory.

Which code inserted on line 1 will accomplish this?

- A. BasicFileAttributes attributes = Files.isDirectory (path);
- B. BasicFileAttributes attributes = Files.getAttribute (path, "isDirectory");
- C. BasicFileAttributes attributes = Files.readAttributes(path, BasicFileAttributes.class)**
- D. BasicFileAttributes attributes = Files.readAttributes (path, FileAttributes.class);



---

**Answer: D**

---

**Question: 209**

Given the code fragment:

```
9. Integer[] ints = {1,2,3,4,5,6,7};
10. var list = Arrays.asList(ints);
11. UnaryOperator<Integer> uo = x -> x * 3;
12. list.replaceAll(uo);
```

Which can replace line 11?

- A. UnaryOperator<Integer> uo = (var x) -> (x \* 3);
- B. UnaryOperator<Integer> uo = var x -> { return x \* 3; };
- C. UnaryOperator<Integer> uo = x -> { return x \* 3; };
- D. UnaryOperator<Integer> uo = (int x) -> x \* 3;

---

**Answer: A**

---

**Question:115**

Given

```
:
public class Point {
    @JsonField(type=JsonField.Type.STRING, name="name")
    private String _name;

    @JsonField(type=JsonField.Type.INT)
    private int x;

    @JsonField(type=JsonField.Type.INT)
    private int y;
}
```

What is the correct definition of the JsonField annotation that makes the Point class compile?

A)

```
@Target(ElementType.FIELD)
@interface JsonField {
    String name() default "";
    enum Type {
        INT, STRING, BOOLEAN
    };
    Type type();
}
```

B)

```

@interface JsonField {
    String name();
    enum Type {
        INT, STRING, BOOLEAN
    };
    Type type();
}

C)

@Retention(RetentionPolicy.RUNTIME)
@Target(ElementType.METHOD)
@interface JsonField {
    String name() default "";
    enum Type {
        INT, STRING, BOOLEAN
    };
    Type type();
}

```

- A. Option A
- B. Option B
- C. Option C

---

**Answer: A**

---

### **Question: 210**

Your organization makes mlib.jar available to your cloud customers. While working on a code cleanup project for mlib.jar, you see this method by customers:

```

public void enableService(String hostName, String portNumber) throws IOException {
    this.transportSocket = new Socket(hostName, portNumber);
}

```

What security measures should be added to this method so that it meets the requirements for a customer accessible method? A.

**Insert this code before the call to new Socket:**

```

hostName = new String(hostName);
portNumber = new String(portNumber);

```

- B. Create a method that validates the hostName and portNumber parameters before opening the socket.
- C. Make enableService private.
- D. Enclose the call to new Socket In an AccessController.doPrivileged block.

**B**

---

**Answer: D**

---

### **Question: 211**

Given the code fragment:

Which two code snippets inserted independently inside print method print Mondial: domainmodal?

- A. prefix + name

- B. prefix + getName
- C. new Main {} .prefix + new Main().name
- D. prefix + Main.name
- E. Main.prefix + Main.name
- F. Main.prefix + Main.getName()

---

**Answer: CD**

---

### **Question: 212**

Given:

```
public interface Copier {  
    public default void print(String msg){  
        System.out.println("Message from Copier: "+msg);  
    }  
}
```

and

```
public abstract class AbstractCopier {  
    protected void print(String load){  
        System.out.println("Message from Abstract Copier: "+load);  
    }  
}
```

and

```
public class TestImpl extends AbstractCopier implements Copier {  
    public static void main(String[] args){  
        TestImpl test = new TestImpl();  
        test.print("Attempt00");  
    }  
}
```

What is the output?

- A. A compilation error is thrown.
- B. Message from Copier: Attempt00 C. Message from Abstract Copier: Attempt00
- D. A runtime error is thrown.

---

**Answer: A**

---

**Question: 213**

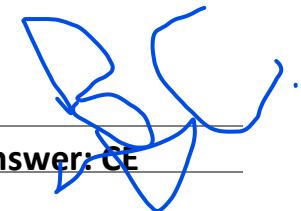
Given:

```
interface Abacus{
    public int calc (int a, int b);
}

public class Main {
    public static void main (String[] args) {
        int result = 0;
        // line 1
        result = aba.calc(10, 20);
        System.out.println(result);
    }
}
```

Which two codes, independently, can be inserted in line to 1 compile?

- A. Abacus aba = (int m, int n) -> { m \* n };
- B. Abacus aba = (int e, int f) -> { return e \* f; };
- C. Abacus aba = (a, b) -> a \* b;
- D. Abacus aba = v, w -> x \* y;
- E. Abacus aba = (int i, j) -> ( return i \* j; );




---

**Answer: CE**

---

**Question: 214**

Given the code fragment:

```
public class FizzBuzz {
    public static String convert(int x) {
        if (x % 15 == 0) return "FizzBuzz";
        else if (x % 3 == 0) return "Fizz";
        else if (x % 5 == 0) return "Buzz";
        else return Integer.toString(x);
    }

    public static void main(String[] args) {
        for (int i = 1; i < 101; i++) {
            System.out.println(convert(i));
        }
    }
}
```

Which code fragment replaces the for statement?

- A. IntStream.rangeClosed(1, 100).map(FizzBuzz::convert).forEach(System.out::println);
- B. IntStream.ranged(1, 100).map(FizzBuzz::convert).forEach(System.out::println);
- C. intstream.rangeclosed(1, 100).mapToObj(FizzBuzz::convert).forEach(System.out::println); D.
- IntStream.range(1, 100).mapToObj(FizzBuzz::convert).forEach(System.out::println);

C

---

**Answer: A**

---

**Thank You for Purchasing 1Z0-819 PDF**