

And:

```
public class TestA {  
    public static void main(String[] args) {  
        Alpha ref1 = new Alpha(100);  
        Alpha ref2 = new Alpha(50);  
        Alpha ref3 = new Alpha(125);  
  
        ref1.doPrint();  
        ref2.doPrint();  
        ref3.doPrint();  
    }  
}
```

What is the result?

- A) ns = 50 s = 50
ns = 125 s = 125
ns = 0 s = 125
- B) ns = 50 s = 50
ns = 125 s = 125
ns = 100 s = 100
- C) ns = 100 s = 125
ns = 0 s = 125
ns = 125 s = 125
- D) ns = 50 s = 125
ns = 125 s = 125
ns = 0 s = 125

D

Choose the best answer.

① Time Remaining 52:26
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Given the code fragment:

```
public static void main(String[] args) {  
    StringBuilder sb = new StringBuilder("Java");  
  
    String s = "Java";  
  
    if (sb.toString().equals(s.toString())) {  
        System.out.println("Match 1");  
    } else if (sb.equals(s)) {  
        System.out.println("Match 2");  
    } else {  
        System.out.println("No Match");  
    }  
}
```

What is the result?

- A) A NullPointerException is thrown at runtime.
- B) No Match
- C) Match 2
- D) Match 3

Given this code for the classes MyException and Test:

```
public class MyException extends RuntimeException {}  
  
public class Test {  
    public static void main(String[] args) {  
        try {  
            method1();  
        }  
        catch (MyException ne) {  
            System.out.print("A");  
        }  
    }  
  
    public static void method1() // line n1  
    try {  
        throw new MyException() : new IOException();  
    }  
    catch (IOException ie) {  
        System.out.println("I");  
    }  
    catch (Exception re) {  
        System.out.print("B");  
    }  
}
```

What is the result?

- A) B
- B) AB
- C) A
- D) I

Given the code fragment:

```
public static void main(String[] args) {  
    int[] arr = {1, 2, 3, 4};  
    int i = 0;  
    do {  
        System.out.print(arr[i] + " ");  
        i++;  
    } while (i < arr.length + 1);  
}
```

What is the result?

- A) 1 2 3 4 followed by an ArrayIndexOutOfBoundsException
- B) 1 2 3 4
- C) 1 2 3
- D) Compilation fails.

Given the code fragment:

```
public class Test{  
    void readCard(int cardNo) throws Exception {  
        System.out.println("Reading Card");  
    }  
  
    void checkCard(int cardNo) throws RuntimeException { // line n1  
        System.out.println("Checking Card");  
    }  
  
    public static void main(String[] args) {  
        Test ex = new Test();  
        int cardNo = 12344;  
        ex.readCard(cardNo);  
        ex.checkCard(cardNo);  
    }  
}
```

What is the result?

- A) Compilation fails at both line n2 and line n3.
- B) Reading Card
- C) Compilation fails only at line n2.
- D) Compilation fails only at line n3.
- E) Compilation fails only at line n1.

C

```
public static void main(String[] args) {  
    ArrayList myList = new ArrayList();  
    String[] myArray;  
    try {  
        while (true) {  
            myList.add("My String");  
        }  
    } catch (Runtimeexception re) {  
        System.out.println("Caught a Runtimeexception");  
    } catch (Exception e) {  
        System.out.println("Caught an Exception");  
    }  
    System.out.println("Ready to use");  
}
```

What is the result?

- A) The code fails to compile because a throws keyword is required.
- B) Execution terminates in the first catch statement, and Caught a Runtimeexception is printed to the console.
- C) Execution completes normally, and Ready to use is printed to the console.
- D) Execution terminates in the second catch statement, and Caught an Exception is printed to the console.
- E) A runtime error is thrown in the thread "main."

Given this class:

```
public class Rectangle {  
    private double length;  
    private double height;  
    private double area;  
  
    public void setLength(double length) {  
        this.length = length;  
    }  
    public void setHeight(double height) {  
        this.height = height;  
    }  
    public void setArea() {  
        area = length * height;  
    }  
}
```

Which two changes would encapsulate this class and ensure that the area field is always equal to length * height whenever the Rectangle class is used?

- A) Change the setArea method to private.
- B) Call the setArea method at the end of the setLength method.
- C) Call the setArea method at the end of the setHeight method.
- D) Change the area field to public.
- E) Call the setArea method at the beginning of the setLength method.
- F) Call the setArea method at the beginning of the setHeight method.

A -

Given:

```
public class Test {  
    public static int stvar = 100;  
    public int var = 200;  
    public String toString() {  
        return stvar + ":" + var;  
    }  
}
```

And given the code fragment:

```
Test t1 = new Test();  
t1.var = 300;  
System.out.println(t1);  
Test t2 = new Test();  
t2.stVar = 300;  
System.out.println(t2);
```

What is the result?

- A) 100:300
300:200
- B) 300:100
200:300
- C) 300:300
200:300
- D) 300:0
0:300

Given this code for the classes MyException and Test:

```
public class MyException extends RuntimeException {}  
  
public class Test {  
    public static void main(String[] args) {  
        try {  
            method1();  
        }  
        catch (MyException ne) {  
            System.out.print("A");  
        }  
    }  
  
    public static void method1() // line n1  
    try {  
        throw new MyException() : new IOException();  
    }  
    catch (IOException ie) {  
        System.out.println("I");  
    }  
    catch (Exception re) {  
        System.out.print("B");  
    }  
}
```

What is the result?

- A) B
- B) AB
- C) A
- D) I

Given the code fragment:

```
3. public static void main(String[] args) {  
4.     int ivar = 100;  
5.     float fvar = 100.100f;  
6.     double dVar = 123;  
7.     fVar = ivar;  
8.     ivar = fVar;  
9.     fvar = dVar;  
10.    dvar = fVar;  
11.    ivar = dVar;  
12.    dVar = ivar;  
13. }
```

Which three lines fail to compile?

- A) line 7
- B) line 10
- C) line 8
- D) line 9
- E) line 11
- F) line 12

```
public class Employee {  
    public int salary;  
}
```

```
public class Manager extends Employee {  
    public int budget;  
}
```

```
public class Director extends Manager {  
    public int stockOptions;  
}
```

And given this main method:

```
public static void main(String[] args) {  
    Employee employee = new Employee();  
    Employee manager = new Manager();  
    Employee director = new Director();  
}
```

Which two options compile when placed at line n1 of the main method?

- A) employee.salary = 50_000;
- B) manager.budget = 1_000_000;
- C) director.salary = 80_000;
- D) director.stockOptions = 1_000;
- E) employee.budget = 200_000;
- F) manager.stockOption = 500;

Given the code fragment:

```
public class Person {  
    String name;  
    int age = 25;  
  
    Person(String name) {  
        setName(name);  
    }  
  
    public Person(String name, int age) {  
        setName(name);  
        setAge(age);  
    }  
  
    // setter and getter methods go here  
  
    public String show() {  
        return name + " " + age;  
    }  
  
    public static void main(String[] args) {  
        Person p1 = new Person("Jesse");  
        Person p2 = new Person("Walter", 52);  
        System.out.println(p1.show());  
        System.out.println(p2.show());  
    }  
}
```

What is the result?

Choose the best answer.

```
public class Student {  
    String name;  
    public Student(String name) {  
        this.name = name;  
    }  
  
    public class Test {  
        public static void main(String[] args) {  
            Student[] students = new Student[3];  
            students[1] = new Student("Richard");  
            students[2] = new Student("Donald");  
            for (Student s : students) {  
                System.out.println(" " + s.name);  
            }  
        }  
    }  
}
```

What is the result?

- A) null
 Richard
 Donald
- B) Compilation fails.
- C) An `ArrayIndexOutOfBoundsException` is thrown at runtime.
- D) Richard
 Donald
- E) An error

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Test

Richard
Donald

Given the code fragment:

```
public static void main(String[] args) {  
    short s1 = 200;  
    Integer s2 = 400;  
    String s3 = (String) (s1 + s2); //line n1  
    Long s4 = (Long) s1 + s2; //line n2  
    System.out.println("Sum is " + s4);  
}
```

What is the result?

- A) A `ClassCastException` is thrown at line n2.
- B) Sum is 600
- C) Compilation fails at line n1.
- D) A `ClassCastException` is thrown at line n1.
- E) Compilation fails at line n2.

C

Choose the best answer.

)
set.name(name);

```
public Person(String name, int age) {  
    setAge(age);  
}  
  
//setter and getter methods go here
```

```
public String show() {  
    return name + " " + age;  
}  
  
public static void main(String[] args) {  
    Person p1 = new Person("Jesse");  
    Person p2 = new Person("Walter", 52);  
    System.out.println(p1.show());  
    System.out.println(p2.show());  
}
```

What is the result?

- A) Jesse 25
Walter 52
- B) Compilation fails only at line n1.
- C) Compilation fails at both line n1 and line n2.
- D) Compilation fails only at line n2.

Given the code fragment:

```
public static void main(String[] args) {  
    int ii = 0;  
    int jj = 7;  
    for (ii = 0; ii < jj; ii = ii + 2) {  
        System.out.print(ii + " ");  
    }  
}
```

What is the result?

- A) 0 2 4
- B) Compilation fails.
- C) 0 2 4 6
- D) 2 4

Given:

```
public class Test {  
    public static void main(String[] args) {  
        boolean a = new Boolean(Boolean.valueOf(args[0]));  
        boolean b = new Boolean(args[1]);  
        System.out.println(a + " " + b);  
    }  
}
```

And given the commands:

```
javac Test.java  
java Test 1 null
```

What is the result?

C

- A) true true

- B) 1 null

- C) false false

- D) true false

- E) A `ClassCastException` is thrown at runtime.

Given the code fragment:

```
int wd = 0;  
String days[] = {"sun", "mon", "wed", "sat"};  
for (String s:days) {  
    switch (s) {  
        case "sat":  
        case "sun":  
            wd -= 1;  
            break;  
        case "mon":  
            wd -= 1;  
            break;  
        case "wed":  
            wd += 2;  
    }  
}  
System.out.println(wd);
```

What is the result?

- A) -1
- B) 0
- C) Compilation fails.
- D) 3

Given:

```
public class Test {  
    public static void main(String[] args) {  
        Test ts = new Test();  
        System.out.print(isAvailable + " ");  
        isAvailable= ts.doStuff();  
        System.out.println(isAvailable);  
    }  
    public static boolean doStuff() {  
        return !isAvailable;  
    }  
    static boolean isAvailable = true;
```

What is the result?

- A) false false
- B) false true
- C) true false
- D) true true
- E) Compilation fails.

Given:

```
public class Test {  
    public static void main(String[] args) {  
        if (args[0].equals("Hello")) ? true : false) {  
            System.out.println("Success");  
        } else {  
            System.out.println("Failure");  
        }  
    }  
}
```

And given the commands:

```
javac Test.java  
java Test Hello
```

What is the result?

- A) An exception is thrown at runtime.
- B) Failure
- C) Success
- D) Compilation fails.

Which two class definitions fail to compile?

- A) private class A2 {
 private static int i;
 private A2() {}
}
- B) abstract class A3 {
 private static int i;
 public void dostuff() {}
}
- C) final abstract class A5 {
 protected static int i;
 void dostuff() {}
 abstract void doIt();
}
- D) class A4 {
 protected static final int i = 10;
}
- E) final class A1 {
 public A1() {}
}

C, D

Given the code fragment:

```
public class Test {  
    static int count = 0;  
    int i = 0;  
  
    public void changeCount() {  
        while (i < 5) {  
            i++;  
            count++;  
        }  
    }  
  
    public static void main(String[] args) {  
        Test check1 = new Test();  
        Test check2 = new Test();  
        check1.changeCount();  
        check2.changeCount();  
        System.out.print(check1.count + " : " + check2.count);  
    }  
}
```

What is the result?

- A) 5 : 5
- B) 5 : 10
- C) Compilation fails.
- D) 10 : 10

D

Given the code fragment:

```
1. public class Test {  
2.     public static void main(String[] args) {  
3.         /* insert code here */  
4.         array[0]=10;  
5.         array[1]=20;  
6.         System.out.print(array[0]+":"+array[1]);  
7.     }  
8. }
```

Which code fragment, when inserted at line 3, enables the code to print 10:20?

- A) int[] array = new int[1];
- B) int array = new int[2];
- C) int[] array;
array = new int[2];
- D) int array[1];

D

```
new Planet("Mercury", 0),  
new Planet("Venus", 0),  
new Planet("Earth", 1),  
new Planet("Mars", 2)  
};
```

```
System.out.println(planets);  
System.out.println(planets[2].name);  
System.out.println(planets[2].moons);  
}
```

What is the output?

- A) [Planets,Planet;@15ab9742
Planets,Planet@6d06d69c
[Planets,Moon;@7852e922
- B) [Planets,Planet;@15ab9742
Earth
]
- C) [Planets,Planet;@15ab9742
Planets,Planet@6d06d69c
]
- D) Planets
Earth
]
- E) [Planets,Planet;@15ab9742
Venus
]

And:

```
public class TestA {  
    public static void main(String[] args) {  
        Alpha ref1 = new Alpha(100);  
        Alpha ref2 = new Alpha(50);  
        Alpha ref3 = new Alpha(125);  
        ref1.doPrint();  
        ref2.doPrint();  
        ref3.doPrint();  
    }  
}
```

What is the result?

- A) ns = 50 s = 50
ns = 125 s = 125
ns = 0 s = 125
- B) ns = 50 s = 50
ns = 125 s = 125
ns = 100 s = 100
- C) ns = 100 s = 125
ns = 0 s = 125
ns = 125 s = 125
- D) ns = 50 s = 125
ns = 125 s = 125
ns = 0 s = 125

Given:

```
class Vehicle {  
    String type = "4W";  
    int maxSpeed = 100;  
  
    Vehicle(String type, int maxSpeed) {  
        this.type = type;  
        this.maxSpeed = maxSpeed;  
    }  
    Vehicle() {}  
  
class Car extends Vehicle {  
    String trans;  
  
    Car(String trans) {  
        this.trans = trans; //line n1  
    }  
  
    Car(String type, int maxSpeed, String trans) {  
        super(type, maxSpeed); // line n2  
        this.trans = trans;  
    }  
}
```

And given the code fragment:

7. Car c1 = new Car("Auto");
8. Car c2 = new Car("4W", 150, "Manual");
9. System.out.println(c1.type + " " + c1.maxSpeed + " " + c1.trans);
10. System.out.println(c2.type + " " + c2.maxSpeed + " " + c2.trans);

Given:**MainTest.java:**

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

and commands:

```
javac MainTest.java  
java MainTest "1 2 3"
```

What is the result?

- A) String main 123

- B) string main 1 2 3

- C) String main 1

- D) An exception is thrown at runtime.

Given the code snippet from a compiled Java source file:

```
public class Myfile
{
    public static void main (String[] args)
    {
        String arg1 = args[0];
        String arg2 = args[1];
        String arg3 = args[2];
        System.out.println("Arg is " + arg3);
    }
}
```

and this output:

Arg is 2

Which command should you run to obtain this output?

- A) java Myfile 1 2 2
- B) java Myfile 2
- C) java Myfile 1 2 3 4
- D) java Myfile 2 2

A

Given:

```
class Animal {  
    String type = "Canine";  
    int maxSpeed = 60;  
  
    Animal() {}  
  
    Animal(String type, int maxSpeed) {  
        this.type = type;  
        this.maxSpeed = maxSpeed;  
    }  
  
    class WildAnimal extends Animal {  
        String bounds;  
        WildAnimal(String bounds) {  
            //line n1  
        }  
  
        WildAnimal(String type, int maxSpeed, String bounds) {  
            //line n2  
        }  
    }  
}
```

And given the code fragment:

7. WildAnimal wolf = new WildAnimal("Long");
8. WildAnimal tiger = new WildAnimal("Feline", 80, "Short");
9. System.out.println(wolf.type + " " + wolf.maxSpeed + " " + wolf.bounds);
10. System.out.println(tiger.type + " " + tiger.maxSpeed + " " + tiger.bounds);

Given this segment of code:

```
ArrayList<Cycle> myList = new ArrayList<>();  
myList.add(new MotorCycle());
```

Which two statements, if either were true, would make the code compile?

- A) Motorcycle is a superclass of cycle.
- B) Cycle is an abstract superclass of MotorCycle.
- C) cycle and Motorcycle both extend the transportation superclass.
- D) Cycle and Motorcycle both implement the transportation interface.
- E) MotorCycle is an interface that implements the cycle class.
- F) Cycle is an interface that is implemented by the Motorcycle class.

Choose the best answer.

① Time Remaining 42:21

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Mark

Given the code fragment:

```
13. List colors = new ArrayList();
14. colors.add("green");
15. colors.add("blue");
16. colors.add("red");
17. colors.add("yellow");
18. colors.remove(2);
19. colors.add(3, "cyan");
20. System.out.print(colors);
```

What is the result?

- A) An IndexOutOfBoundsException is thrown at runtime.
- B) [green, red, yellow, cyan]
- C) [green, blue, yellow, cyan]
- D) [green, red, cyan, yellow]

Choose the best answer.

 Mark

Given the code fragment:

```
String shirts[][] = new String[2][2];
shirts[0][0] = "red";
shirts[0][1] = "blue";
shirts[1][0] = "small";
shirts[1][1] = "medium";
```

Which code fragment prints red:blue:small:medium?

- A) for (int index = 0; index < 2; ++index) {
 for (int idx = 0; idx < index; ++idx) {
 System.out.print(shirts[index][idx] + ":");
 }
}
- B) for (int index = 0; index <= 2;) {
 for (int idx = 0; idx <= index;) {
 System.out.print(shirts[index][idx] + ":");
 idx++;
 }
 index++;
}
- C) for (String[] c : shirts) {
 for (String s : c) {
 System.out.print(s + ":");
 }
}
- D) for (int index = 1; index < 2; index++) {
 for (int idx = 1; idx < 2; idx++) {
 System.out.print(shirts[index][idx] + ":");
 }
}

Choose the best answer.

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Mark

```
class Test {  
    int a1;  
  
    public static void doproduct(int a) {  
        a = a * a;  
    }  
  
    public static void doString(String s) {  
        s.concat(" " + s);  
    }  
  
    public static void main(String[] args) {  
        Test item = new Test();  
        item.a1 = 11;  
        String sb = "Hello";  
        Integer i = 10;  
        doproduct(i);  
        doString(sb);  
        doproduct(item.a1);  
        System.out.println(i + " " + sb + " " + item.a1);  
    }  
}
```

What is the result?

- A) 10 Hello 11
- B) 10 Hello Hello 121
- C) 100 Hello 121
- D) 10 Hello Hello 11
- E) 100 Hello Hello 121

⑦ Help

Choose the best answer.

```
Vehicle(int x) {  
    this.x = x;  
}
```

```
class Car extends Vehicle {  
    int y;  
    Car() {  
        super(10); // line n2  
    }  
    Car(int y) {  
        super(y);  
        this.y = y;  
    }  
    public String toString() {  
        return super.x + ":" + this.y;  
    }  
}
```

And given the code fragment:

```
Vehicle y = new Car(20);  
System.out.println(y);
```

What is the result?

- A) Compilation fails at line n2.
- B) 10:20
- C) Compilation fails at line n1.
- D) 20:20

Mark

Which three are advantages of the Java exception mechanism?

- A) improves the program structure because the error handling code is separated from the normal program function
- B) provides a set of standard exceptions that covers all possible errors
- C) improves the program structure because the programmer can choose where to handle exceptions
- D) improves the program structure because exceptions must be handled in the method in which they occurred
- E) allows the creation of new exceptions that are customized to the particular program being created

A C / X

Choose the best answer.

① Time Remaining 52:26
⌚ 26 of 70 Mark

Given the code fragment:

```
public static void main(String[] args) {  
    StringBuilder sb = new StringBuilder("Java");  
  
    if (sb.toString().equals(s.toString())) {  
        System.out.println("Match 1");  
    } else if (sb.equals(s)) {  
        System.out.println("Match 2");  
    } else {  
        System.out.println("No Match");  
    }  
}
```

What is the result?

- A) A NullPointerException is thrown at runtime.
- B) No Match
- C) Match 2
- D) Match 3

Choose the best answer.

① Time Remaining 57:48
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Given:

```
public class App {  
    public static void main(String[] args) {  
        int i = 10;  
        int j = 20;  
        int k = (j += i) / 5;  
        System.out.print(i + " : " + j + " : " + k);  
    }  
}
```

What is the result?

- A) 10 : 30 : 6
- B) 10 : 22 : 20
- C) 10 : 22 : 22
- D) 10 : 22 : 6

A

Given the code fragment:

```
public static void main(String[] args) {  
    String date = LocalDate  
        .parse("2014-05-04")  
        .format(DateTimeFormatter.ISO_DATE_TIME);  
    System.out.println(date);  
}
```

What is the result?

- A) 2014-05-04T00:00:00.000
- B) May 04, 2014T00:00:00.000
- C) 5/4/14T00:00:00.000
- D) An exception is thrown at runtime.



Choose the best answer.

① Time Remaining 54:56
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Given the code fragment:

```
public static void main(String[] args) {  
    LocalDate date = LocalDate.of(2012, 1, 30);  
    date.plusDays(10);  
    System.out.println(date);  
}
```

B

What is the result?

- A) A DateTimeException is thrown at runtime.
- B) 2012-01-30
- C) 2012-02-10 00:00
- D) 2012-02-10

Choose the best answer.

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Mark

```
interface I {  
    public void displayI();  
}  
abstract class C2 implements I {  
    public void displayC2() {  
        System.out.print("C2");  
    }  
}  
class C1 extends C2 {  
    public void displayI() {  
        System.out.print("C1");  
    }  
}
```

And the code fragment:

```
C2 obj1 = new C1();  
I obj2 = new C1();  
  
C2 s = (C2) obj2;  
I t = obj1;  
  
t.displayI();  
s.displayC2();
```

What is the result?

- A) c1c1
- B) Compilation fails.
- C) c1c2
- D) c2c2

```
Car (String trans) { // line n1  
    this.trans = trans;  
}  
  
car (String type, int maxSpeed, String trans) {  
    super(type, maxSpeed); // line n2  
    this.trans = trans;  
}  
}
```

And given the code fragment:

```
7. Car c1 = new Car ("Auto");  
8. Car c2 = new Car ("4W", 150, "Manual");  
9. System.out.println(c1.type + " " + c1.maxSpeed + " " + c1.trans);  
10. System.out.println(c2.type + " " + c2.maxSpeed + " " + c2.trans);
```

What is the result?

- A) null 0 Auto
4W 150 Manual
- B) Compilation fails at both line n1 and line n2.
- C) Compilation fails only at line n1.
- D) Compilation fails only at line n2.
- E) 4W 100 Auto
4W 150 Manual

DA

Given the code fragment,

```
Package clothing.pants;
// line n1
public class Jeans {
    public void matchShirt() {
        // line n2
        if(color.equals("Green")) {
            System.out.print("Fit");
        }
    }
}
public static void main(String[] args) {
    Jeans trouser = new Jeans();
    trouser.matchShirt();
}
```

Which two sets of actions, independently, enable the code fragment to print Fit?

- A) At line n1 no changes required.
At line n2 insert: String color = Shirt.getColor();
- B) At line n1 insert: import clothing.Shirt;
At line n2 insert: String color = Shirt.getColor();
- C) At line n1 insert: import static clothing.Shirt.getColor;
At line n2 insert: String color = getColor();
- D) At line n1 insert: import clothing;
At line n2 insert: String color = Shirt.getColor();
- E) At line n1 insert: import Shirt;
At line n2 insert: String color = Shirt.getColor();

B, C

Choose the best answer.

Mark

Given:

```
public class MyField {  
    int x;  
    int y;  
    public void doStuff(int x, int y) {  
        x = x;  
        y = this.y;  
    }  
    public void display() {  
        System.out.print(x + " " + y + " : ");  
    }  
}  
public static void main(String[] args) {  
    MyField m1 = new MyField();  
    m1.x = 100;  
    m1.y = 200;  
    MyField m2 = new MyField();  
    m2.doStuff(m1.x, m1.y);  
    m1.display();  
    m2.display();  
}
```

What is the result?

- A) 100 200 : 0 0 :
- B) 100 200 : 100 0 :
- C) 100 200 : 100 200 :
- D) 0 0 : 100 0 :

Choose the best answer.

Mark

Given the code fragments:

```
interface Exportable {
    void export();
}

class Tool implements Exportable {
    public void export() {
        System.out.println("Tool::export");
    }
}

class ReportTool extends Tool {
    void export() {
        System.out.println("RTool::export"); // Line n1
    }
}

public static void main(String[] args) {
    Tool aTool = new ReportTool();
    callExport(aTool);
    callExport(bTool);
}

public static void callExport(Exportable ex) {
    ex.export();
}
```

What is the result?

I

```
class ReportTool extends Tool {  
  
    void export() {  
        System.out.println("RTool::export"); // line n2  
    }  
  
    public static void main(String[] args) {  
        Tool aTool = new ReportTool();  
        Tool bTool = new Tool();  
        callExport(aTool);  
        callExport(bTool);  
    }  
  
    public static void callExport(Exportable ex) {  
        ex.export();  
    }  
}
```

What is the result?

- A) Compilation fails at both line n1 and line n2.
- B) Tool::export
 Tool::export
- C) Compilation fails only at line n1.
- D) Compilation fails only at line n2.
- E) RTool::export
 Tool::export

D

Choose the best answer.

① Time Remaining 50:56
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Mark

Given:

```
public class MyClass {  
    public static void main(String[] args) {  
        String s = " Java SE 8 1";  
        int len = s.trim().length();  
        System.out.print(len);  
    }  
}
```

What is the result?

- A) 9
- B) 11
- C) 8
- D) 10
- E) Compilation fails.

B

Given:

```
public class Test {  
    public static final int MIN = 1;  
    public static void main(String[] args) {  
        int x = args.length;  
        if(checkLimit(x)){  
            // line n1  
            System.out.println("Java SE");  
        } else {  
            System.out.println("Java EE");  
        }  
    }  
    public static boolean checkLimit(int x) {  
        return (x >= MIN) ? true : false;  
    }  
}
```

And given the commands:

```
javac Test.java  
java Test 1
```

What is the result?

- A) Java SE
- B) A NullPointerException is thrown at runtime.
- C) Compilation fails at line n1.
- D) Java EE

Given the code fragment:

```
public static void main(String[] args) {  
    int array[] = {10, 20, 30, 40, 50};  
    int x = array.length;  
    /* line n1 */  
}
```

Which two code fragments can be independently inserted at line n1 to enable the code to print the elements of the array in reverse order?

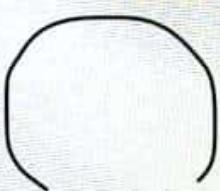
- A) while (x > 0) {
 System.out.print(array[--x]);
}
- B) do {
 x--;
 System.out.print(array[x]);
} while (x > 0);
- C) do {
 System.out.print(array[x]);
 --x;
} while (x >= 0);
- D) while (x < 0) {
 System.out.print(array[x]);
 x--;
}
- E) while (x > 0) {
 System.out.print(array[x]);
 x++;
}

You are asked to create a method that accepts an array of integers and returns the highest value from that array.

Given the code fragment:

```
class Test{  
    public static void main(String[] args) {  
        int numbers[] = {12, 13, 42, 32, 15, 156, 23, 51, 12};  
        int[] keys = findMax(numbers);  
    }  
  
    /* line n1 */  
    int[] keys = new int[3];  
    /* code goes here */  
    return keys;  
}
```

Which method signature do you use at line n1?



- A) public int findMax(int[] numbers)
- B) static int[] findMax(int[] max)
- C) static int findMax(int[] numbers)
- D) final int findMax(int[])

Given the code fragment:

```
public static void main(String[] args) {  
    double discount = 0;  
    int qty = Integer.parseInt(args[0]);  
    //line n1;  
}
```

And given the requirements:

- If the value of the qty variable is greater than or equal to 90, discount = 0.5
- If the value of the qty variable is between 80 and 90, discount = 0.2

Which two code fragments can be independently placed at line n1 to meet the requirements?

- A) discount = (qty >= 90) ? 0.5 : (qty > 80) ? 0.2 : 0;
- B) discount = (qty >= 90) ? 0.5 : 0;
discount = (qty > 80) ? 0.2 : 0;
- C) if (qty >= 90) { discount = 0.5; }
if (qty > 80 && qty < 90) { discount = 0.2; }
- D) discount = (qty > 80) ? 0.2 : (qty >= 90) ? 0.5 : 0;
- E) if (qty > 80 && qty < 90) {
 discount = 0.2;
} else {
 discount = 0;
}
if (qty >= 90) {
 discount = 0.5;
} else {
 discount = 0;

Choose the best answer.

Mark

Given:

```
interface Downloadable {  
    public void download();  
}  
  
interface Readable extends Downloadable { // line n1  
    public void readBook();  
}  
  
abstract class Book implements Readable { // line n2  
    public void readBook() {  
        System.out.println("Read Book");  
    }  
}  
  
class EBook extends Book {  
    public void readBook() {  
        System.out.println("Read E-Book");  
    }  
}
```

And given the code fragment:

```
Book book1 = new EBook();  
book1.readBook();
```

What is the result?

- A) Compilation fails at line n1.

Choose the best answer.

Mark

Given:

```
interface Downloadable {  
    public void download();  
}  
  
interface Readable extends Downloadable { // line n1  
    public void readBook();  
}  
  
abstract class Book implements Readable { // line n2  
    public void readBook() {  
        System.out.println("Read Book");  
    }  
}  
  
class EBook extends Book {  
    public void readBook() {  
        System.out.println("Read E-Book");  
    }  
}
```

And given the code fragment:

```
Book book1 = new EBook();  
book1.readBook();
```

What is the result?

- A) Compilation fails at line n1.

public class Employee {

 String name;

 boolean contract;

 double salary;

 Employee() {

 // line n1

 }

 public String toString() {

 return name + ":" + contract + ":" + salary;

 }

 public static void main(String[] args) {

 // line n2

 System.out.print(e);

}

Which two modifications, when made independently, enable the code to print Joe:true:100.0?

A) Replace Line n1 with:

 this("Joe", true, 100);

B) Replace line n2 with:

 e.name = "Joe";

 e.contract = true;

 e.salary = 100;

C) Replace line n1 with:

 this.name = new String("Joe");

 this.contract = new Boolean(true);

D) Replace line n1 with:

 name = "Joe";

 contract = true;

Given the code fragment:

```
7. stringqBuilder sb1 = new StringqBuilder ("Duke");
8. string str1 = sb1.toString();
9. // insert code here
10. System.out.print(str1 == str2);
```

Which code fragment, when inserted at line 9, enables the code to print true?

- A) string str2 = "Duke";
- B) String str2 = str1;
- C) string str2 = sb1.toString();
- D) string str2 = new string(str1);

B

Choose the best answer.

① Time Remaining 57:22
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Mark

This grid shows the state of a 2D array:

| | | |
|---|---|---|
| O | O | |
| | X | O |
| X | | X |

The grid is created with this code:

```
char [][] grid = new char [3] [3];  
grid[1][1] = 'X';  
grid[0][0] = 'O';  
grid[2][0] = 'X';  
grid[0][1] = 'O';  
grid[2][2] = 'X';  
grid[1][2] = 'O';  
//line n1
```

Which line of code, when inserted in place of //line n1, adds an x into the grid so that the grid contains three consecutive xs?

- A) grid[2][1] = 'X';
- B) grid[3][1] = 'X';
- C) grid[2][3] = 'X';
- D) grid[3][2] = 'X';

A

Given the code fragment:

```
int nums1[] = {1, 2, 3};  
int nums2[] = {1, 2, 3, 4, 5};  
nums2 = nums1;  
for (int x : nums2){  
    System.out.print(x + " ");  
}
```

What is the result?

- A) 1:2:3:4:5:
- B) 1:2:3:
- C) Compilation fails.
- D) An `ArrayOutOfBoundsException` is thrown at runtime.

PM

Choose the best answer.

① Time Remaining 56:21
≡ 10 of 70

Mark

Given the code fragment:

```
int n[][] = {{1, 3}, {2, 4}};  
for (int i = n.length - 1; i >= 0; i--) {  
    for (int j = n[i].length - 1; j >= 0; j--) {  
        System.out.print(n[i][j]);  
    }  
}
```

What is the result?

- A) 4231
- B) 2413
- C) 1324
- D) 3142

A

Choose two.

① Time Remaining 58:37
3 of 70

Mark

Which two statements are true about Java byte code?

- A) It can be serialized across network.
- B) It can run on any platform that has a Java compiler.
- C) It can run on any platform that has the Java Runtime Environment.
- D) It has ".java" extension.
- E) It can run on any platform.

Given the code fragment:

```
public static void main(String[] args) {  
    String ta = "A ";  
    ta = ta.concat("B ");  
    String tb = "C ";  
    ta = ta.concat(tb);  
    ta.replace("B", "C");  
    ta = ta.concat("D");  
    System.out.println(ta);  
}
```

What is the result?

- A) A B C C
- B) A C D
- C) A B D C
- D) A B C D
- E) A C D D

D

Given the code fragment:

```
public static void main(String[] args) {  
    int[][] arr = new int[2][4];  
  
    arr[0] = new int[]{1, 3, 5, 7};  
    arr[1] = new int[]{1, 3};  
  
    for (int[] a : arr) {  
        for (int i=0; i < arr.length; i++) {  
            System.out.print(a[i] + " ");  
        }  
        System.out.println();  
    }  
}
```

What is the result?

- A) 1 3 5 7
 1 3
- B) 1 3
 followed by an ArrayIndexOutOfBoundsException
- C) 1 3
 1 3 0 0
- D) Compilation fails.
- E) 1 3
 1 3

Choose the best answer.

① Time Remaining 54:46
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Mark

Given:

```
class Equal {  
    public static void main(String[] args) {  
        String str1 = "Java";  
        String[] str2 = {"J", "a", "v", "a"};  
        String str3 = "";  
        for(String str : str2) {  
            str3= str3+str;  
        }  
        boolean b1 = (str1.equals(str3));  
        boolean b2 = (str1 == str3);  
        System.out.print(b1+", "+b2);  
    }  
}
```

What is the result?

- A) true, true
- B) false, false
- C) false, true
- D) true, false

D

Choose the best answer.

Mark

Given:

```
class Test {  
    public static void main(String[] args) {  
        int numbers[];  
        numbers = new int[2];  
        numbers[0] = 10;  
        numbers[1] = 20;  
  
        numbers = new int[4];  
        numbers[2] = 30;  
        numbers[3] = 40;  
        for (int x : numbers) {  
            System.out.print(" "+x);  
        }  
    }  
}
```

What is the result?

- A) 0 0 30 40
- B) 10 20 30 40
- C) An exception is thrown at runtime.
- D) Compilation fails.

A

Given:

```
public class Test {  
    int x, y;  
  
    public Test(int x, int y) {  
        initialize(x, y);  
    }  
  
    public void initialize(int x, int y) {  
        this.x = x * x;  
        this.y = y * y;  
    }  
  
    public static void main(String[] args) {  
        int x = 9, y = 5;  
        Test obj = new Test(x, y);  
        System.out.println(x + " " + y);  
    }  
}
```

What is the result?

- A) Compilation fails.
- B) 0 0
- C) 81 25
- D) 9 5

D

Choose the best answer.

① Time Remaining 52:35

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Mark

Given:

```
public class Test {  
    public static void main(String[] args) {  
        int x = 1;  
        int y = 1;  
        if (x++ < ++y) {  
            System.out.print("Hello ");  
        } else {  
            System.out.print("Welcome ");  
        }  
        System.out.print("Log " + x + ":" + y);  
    }  
}
```

What is the result?

- A) Welcome Log 1:2
- B) Hello Log 1:2
- C) Welcome Log 2:1
- D) Hello Log 2:2

D

9. `System.out.println(wolf.type + " " + wolf.maxSpeed + " " + wolf.bounds);`
10. `System.out.println(tiger.type + " " + tiger.maxSpeed + " " + tiger.bounds);`

and this output:

Canine 60 Long
Feline 80 short

Which two modifications enable the code to print this output?

- A) Replace line n1 with:

```
this.bounds = bounds;  
super();
```

- B) Replace line n1 with:

```
this("Canine", 60);  
this.bounds = bounds;
```

- C) Replace line n2 with:

```
super(type, maxSpeed);  
this(bounds);
```

- D) Replace line n2 with:

```
super(type, maxSpeed);  
this.bounds = bounds;
```

- E) Replace line n1 with:

```
super();  
this.bounds = bounds;
```

Given the code fragment:

```
public class Test {  
    public static void main(String[] args) {  
        //line n1  
        switch (x) {  
            case 1:  
                System.out.println("one");  
                break;  
            case 2:  
                System.out.println("two");  
                break;  
        }  
    }  
}
```

B d e

Which three code fragments can be independently inserted at line n1 to enable the code to print one?

- A) double x = 1;
- B) byte x = 1;
- C) string x = "1";
- D) Integer x = new Integer("1");
- E) short x = 1;

Given the code fragment:

```
4. class X {  
5.     public void printFileContent() {  
6.         /* code goes here */  
7.         throw new IOException();  
8.     }  
9. }  
10. public class Test {  
11.     public static void main(String[] args) {  
12.         X xobj = new X();  
13.         xobj.printFileContent();  
14.     }  
15. }
```

Which two modifications should you make so that the code compiles successfully?

- A) Replace line 11 with public static void main(String[] args) throws Exception {
- B) At line 14, insert throw new IOException();
- C) Replace line 7 with throw IOException("Exception raised");
- D) Replace line 5 with public void printFileContent() throws IOException {
- E) Replace line 13 with:

```
try {  
    xobj.printFileContent();  
}  
catch (Exception e) {  
    catch (IOException e) {  
}
```

Given:

```
package clothing;
public class Shirt {
    public static String getColor() {
        return "Green";
    }
}
```

Given the code fragment:

```
package clothing.pants;
// line n1
public class Jeans {
    public void matchshirt() {
        // line n2
        if(color.equals("Green")){
            System.out.print("Fit");
        }
    }
    public static void main(String[] args) {
        Jeans trouser = new Jeans();
        trouser.matchshirt();
    }
}
```

Which two sets of actions, independently, enable the code fragment to print Fit?

- A) At line n1 no changes required.
At line n2 insert: string color = Shirt.getColor();

B, C

Given:

```
public class Triangle {  
    static double area;  
    int b = 2, h = 3;  
  
    public static void main(String[] args) {  
        double p, b, h; //line n1  
        if (area == 0) {  
            b = 3;  
            h = 4;  
            p = 0.5;  
            area = p * b * h; //line n2  
        }  
        System.out.println("Area is " + area);  
    }  
}
```

What is the result?

- A) Area is 6.0
- B) Area is 3.0
- C) Compilation fails at line n2.
- D) Compilation fails at line n1.

X

Given:

```
class Vehicle {  
    int x;  
    Vehicle(){  
        this(10); // line n1  
    }  
    Vehicle(int x) {  
        this.x = x;  
    }  
}
```

```
class Car extends Vehicle {
```

```
    int y;  
    Car() {  
        super(10); // line n2  
    }  
    Car(int y) {  
        super(y);  
        this.y = y;  
    }  
    public String toString() {  
        return super.x + ":" + this.y;  
    }  
}
```

And given the code fragment:

```
Vehicle y = new Car(20);  
System.out.println(y);
```

What is the result?

Given this array:

```
int[] intarr = {8, 16, 32, 64, 128};
```

Which two code fragments, independently, print each element in this array?

- A)

```
for (int i=0; i < intarr.length; i++) {
    System.out.print(intarr[i] + " ");
}
```
- B)

```
for (int i=0 : intarr) {
    System.out.print(intarr[i] + " ");
}
```
- C)

```
for (int i : intarr) {
    System.out.print(intarr[i] + " ");
}
```
- D)

```
for (int i; i < intarr.length; i++) {
    System.out.print(intarr[i] + " ");
}
```
- E)

```
for (int i=0; i < intarr.length; i++) {
    System.out.print(i + " ");
}
```
- F)

```
for (int i : intarr) {
    System.out.print(i + " ");
}
```

Given this code for a Planet object:

```
public class Planet {  
    public String name;  
    public int moons;
```

```
public Planet(String name, int moons) {  
    this.name = name;  
    this.moons = moons;  
}
```

And this method:

```
public static void main(String[] args){  
    Planet[] planets = {  
        new Planet("Mercury", 0),  
        new Planet("Venus", 0),  
        new Planet("Earth", 1),  
        new Planet("Mars", 2)  
    };
```

```
System.out.println(planets);  
System.out.println(planets[2].name);  
System.out.println(planets[2].moons);  
}
```

What is the output?

- A) [LPlanets.Planet@15db9742
Planets.Planet@6d06d9c
[LPlanets.Moon@7852e922

Given the code fragment:

```
24. float var1 = (12_345.01 <= 123_45.00) ? 12_456 : 124_56.02E;
```

What is the result?

- A) 13480.02
- B) Compilation fails.
- C) An exception is thrown at runtime.
- D) 13480.0

A

D

Given the code fragment:

```
String[] arr = {"Hi", "How", "Are", "You"};
List<String> arrList = new ArrayList<>(Arrays.asList(arr));
if(arrList.removeIf(s -> { System.out.print(s); return s.length() <= 2; })) {
    System.out.println(" removed");
}
```

What is the result?

- A) The program compiles, but it prints nothing.
- B) Compilation fails.
- C) HiHowAreYou removed
- D) An UnsupportedOperationException is thrown at runtime.

Given the code fragment:

```
abstract class Toy {  
    int price;  
    // line n1  
}
```

Which three code fragments are valid at line n1?

- A) public int calculatePrice() {
 return price;
 }
- B) final Toy getToy() {
 return new Toy();
 }
- C) public void printToy();
- D) public static insertToy() {
 /* code goes here */
 }
- E) public abstract int computedDiscount();

A, B, C, D

Which is true about the switch statement?

- A) It must contain the default section.
- B) Its case label literals can be changed at runtime.
- C) Its expression can evaluate to a collection of values.
- D) The break statement, at the end of each case block, is optional.

D

Given:

```
class C {  
    public C() {  
        System.out.print("C ");  
    }  
  
    class B extends C {  
        public B() {  
            System.out.print("B ");  
        }  
  
        public class A extends B {  
  
            public A() {  
                System.out.print("A ");  
            }  
            public static void main(String[] args) {  
                A a = new A();  
            }  
        }  
    }  
}
```

What is the result?

- A) C B A
- B) C
- C) A B C
- D) Compilation fails at line n1 and line n2.

Mark

Given the code fragments:

```
class Student {  
    String name;  
    int age;  
}
```

And:

```
4. public class Test {  
5.     public static void main(String[] args) {  
6.         Student s1 = new Student();  
7.         Student s2 = new Student();  
8.         Student s3 = new Student();  
9.         s1 = s3;  
10.        s3 = s2;  
11.        s1 = s2;  
12.    }  
13. }
```

Which statement is true?

- A) After line 11, none of the objects are eligible for garbage collection.
- B) After line 11, two objects are eligible for garbage collection.
- C) After line 11, one object is eligible for garbage collection.
- D) After line 11, three objects are eligible for garbage collection.

Choose the best answer.

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Mark

Given the code fragment:

```
public static void main(String[] args) {
    String[] arr = {"A", "B", "C", "D"};
    for (int i = 0; i < arr.length; i++) {
        System.out.print(arr[i] + " ");
        if (arr[i].equals("B")) {
            System.out.println("Work done");
            break;
        }
    }
    continue;
}
```

What is the result?

- A) A B C D Work done
- B) Compilation fails.
- C) A B C Work done
- D) A Work done

Given:

Acc.java:

```
package p1;  
public class Acc {  
    int p;  
    private int q;  
    protected int r;  
    public int s;
```

Test.java:

```
package p2;  
import p1.Acc;  
public class Test extends Acc {  
    public static void main(String[] args) {  
        Acc obj = new Test();  
    }  
}
```

Which statement is true?

- A) Both p and s are accessible via obj.
- B) p, r, and s are accessible via obj.
- C) Only s is accessible via obj.
- D) Both r and s are accessible via obj.

```
interface Readable extends Downloadable { // line n1
    public void readBook();
}
```

```
abstract class Book implements Readable { // line n2
    public void readBook() {
        System.out.println("Read Book");
    }
}
```

```
class EBook extends Book { // line n3
    public void readBook() {
        System.out.println("Read E-Book");
    }
}
```

And given the code fragment:

```
Book book1 = new EBook();
book1.readBook();
```

What is the result?

- A) Compilation fails at line n1.
- B) Compilation fails at line n3.
- C) Read E-Book
- D) Read Book
- E) Compilation fails at line n2.

AB

Given the code fragments:

```
class Student {  
    String name;  
    int age;  
}
```

And:

```
4. public class Test {  
5.     public static void main(String[] args) {  
6.         Student s1 = new Student();  
7.         Student s2 = new Student();  
8.         Student s3 = new Student();  
9.         s1 = s3;  
10.        s3 = s2;  
11.        s1 = s2;  
12.    }  
13. }
```

Which statement is true?

- A) After line 11, none of the objects are eligible for garbage collection.
- B) After line 11, two objects are eligible for garbage collection.
- C) After line 11, one object is eligible for garbage collection.
- D) After line 11, three objects are eligible for garbage collection.

Choose three.

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Mark

Which three statements describe the object-oriented features of the Java language?

- A) A main method must be declared in every class.
- B) A subclass must override the methods from a superclass.
- C) A package must contain a main class.
- D) Objects can share behaviors with other objects.
- E) Objects can be reused.
- F) Object is the root class of all other objects.

