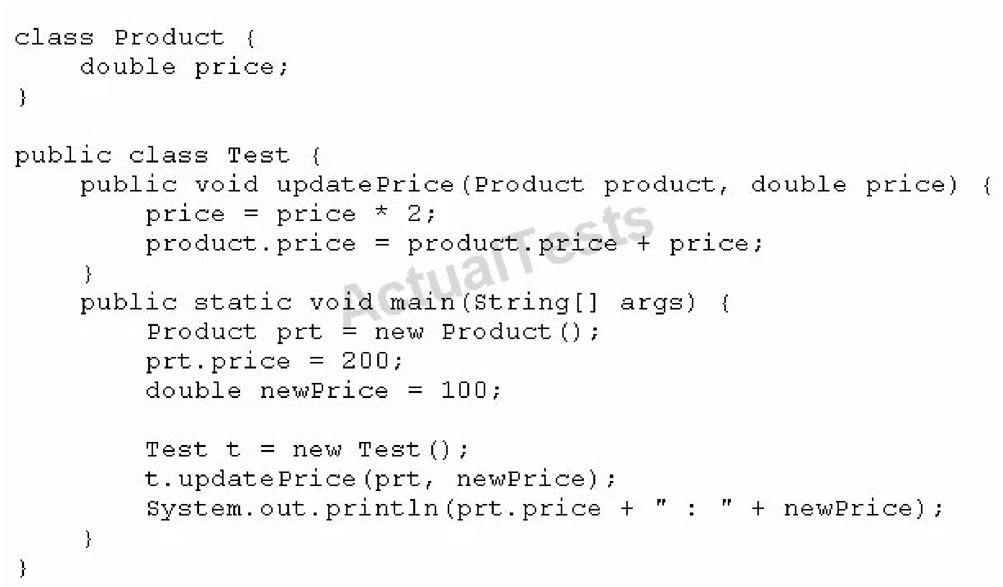
QUESTION NO: 1

Given:



```
class Product {
    double price;
}

public class Test {
    public void updatePrice(Product product, double price) {
        price = price * 2;
        product.price = product.price + price;
    }
    public static void main(String[] args) {
        Product prt = new Product();
        prt.price = 200;
        double newPrice = 100;

        Test t = new Test();
        t.updatePrice(prt, newPrice);
        System.out.println(prt.price + " : " + newPrice);
    }
}
```

What is the result?

A.
200.0 : 100.0

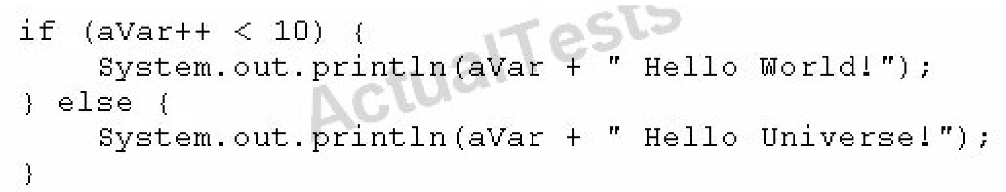
B.
400.0 : 200.0

C.
400.0 : 100.0

D.
Compilation fails.

QUESTION NO: 2

Given the code fragment:



```
if (aVar++ < 10) {
    System.out.println(aVar + " Hello World!");
} else {
    System.out.println(aVar + " Hello Universe!");
}
```

What is the result if the integer aVar is 9?

A. 10 Hello World!

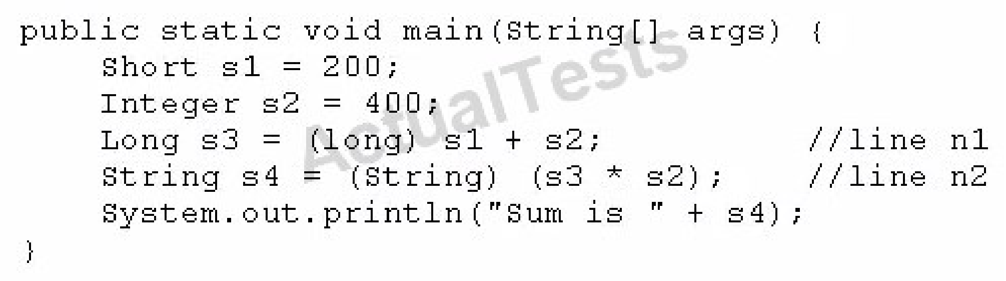
B. Hello Universe!

C. Hello World!

D. Compilation fails.

QUESTION NO: 4

Given the code fragment:



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

What is the result?

A. Sum is 600

B. Compilation fails at line n1.

C. Compilation fails at line n2.

D. A ClassCastException is thrown at line n1.

E. A ClassCastException is thrown at line n2.

QUESTION NO: 5

What is the name of the Java concept that uses access modifiers to protect variables and hide them within a class?

A. Encapsulation

B. Inheritance

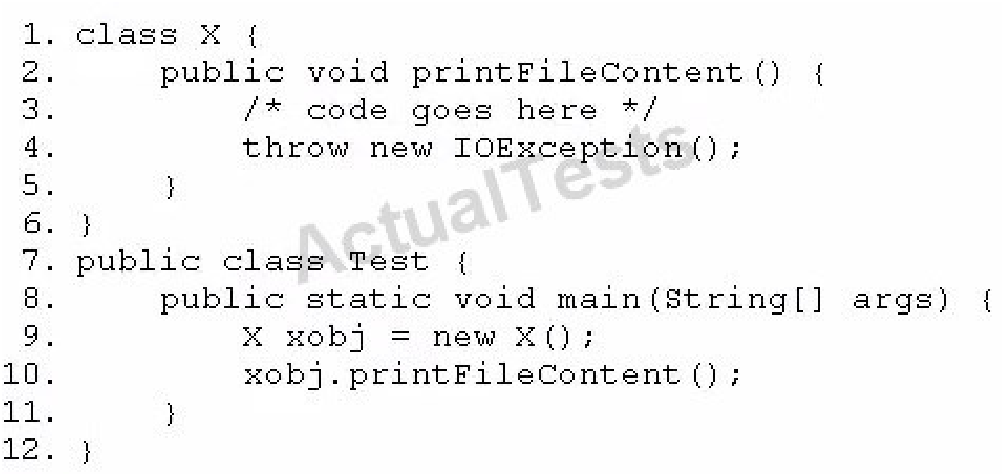
C. Abstraction

D. Instantiation

E. Polymorphism

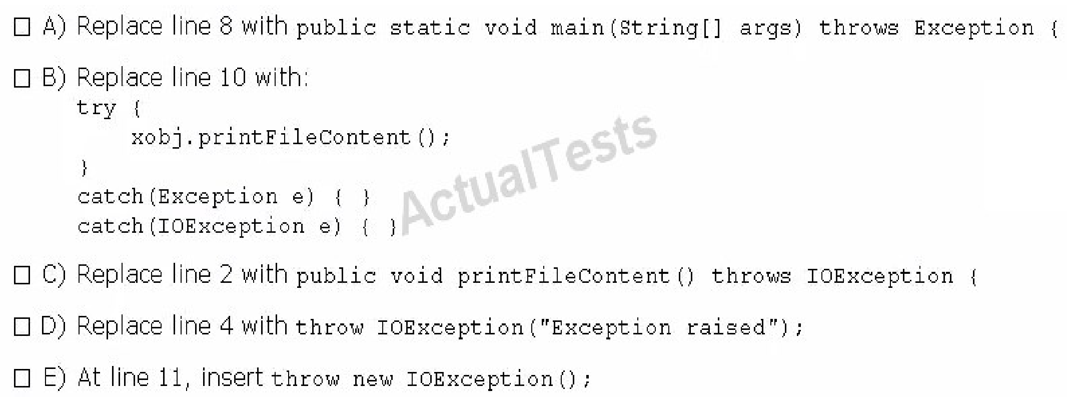
QUESTION NO: 8

Given the code fragment:



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

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



□ A) Replace line 8 with `public static void main(String[] args) throws Exception {`

□ B) Replace line 10 with:

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

□ C) Replace line 2 with `public void printFileContent() throws IOException {`

□ D) Replace line 4 with `throw IOException("Exception raised");`

□ E) At line 11, insert `throw new IOException();`

A. Option A

B. Option B

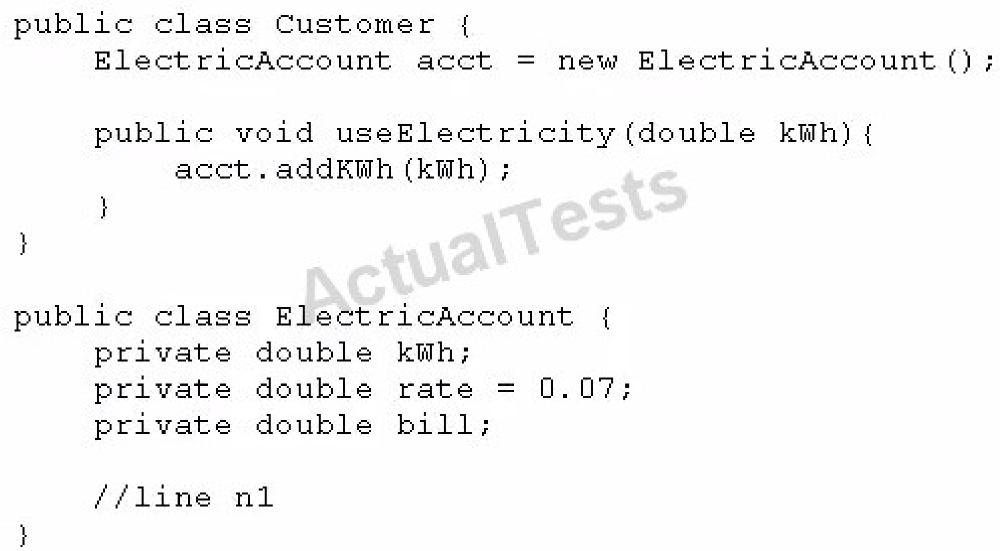
C. Option C

D. Option D

E. Option E

QUESTION NO: 9

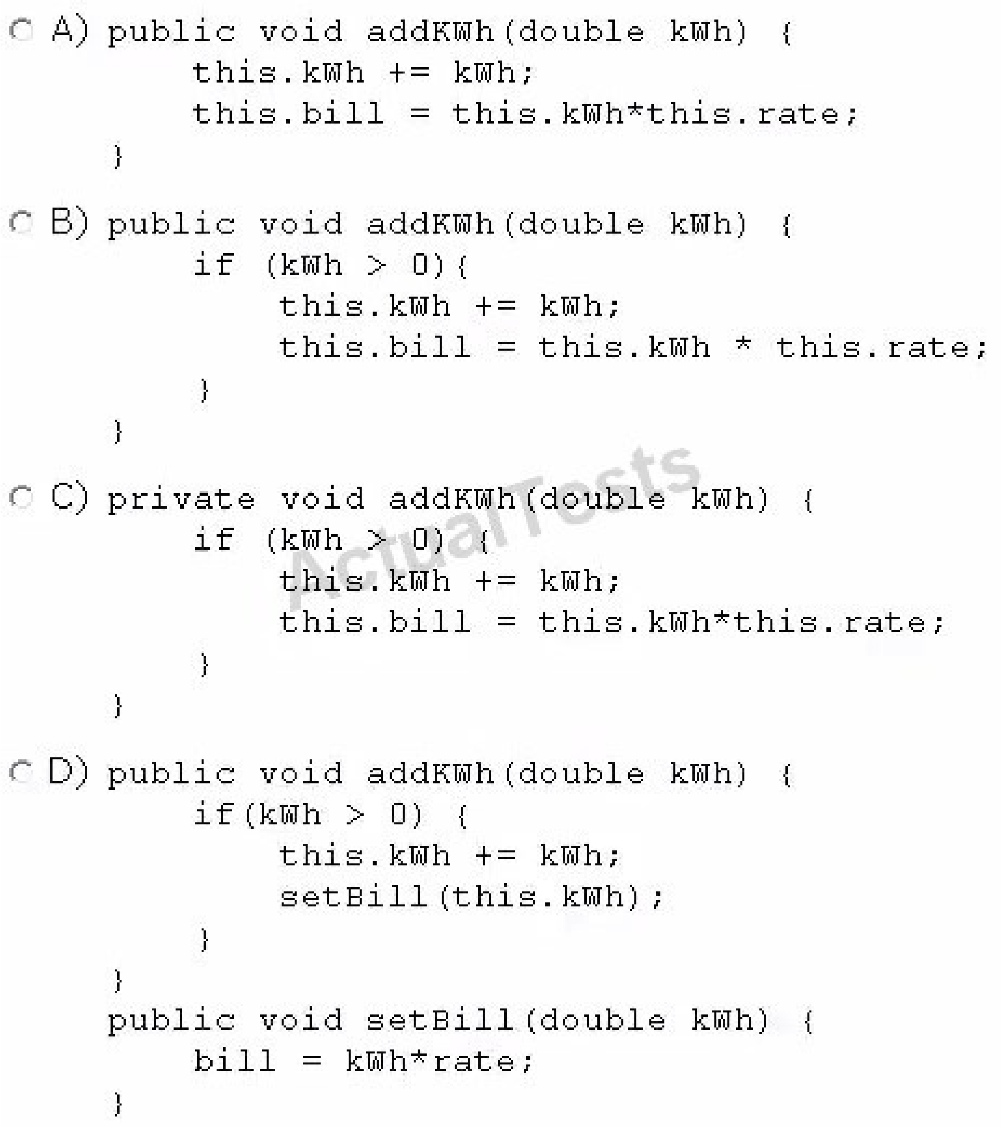
Given the following two classes:



```
public class Customer {
    ElectricAccount acct = new ElectricAccount();

    public void useElectricity(double kWh){
        acct.addKWh(kWh);
    }
}

public class ElectricAccount {
    private double kWh;
    private double rate = 0.07;
    private double bill;

    //line n1
}
```

How should you write methods in the ElectricAccount class at line n1 so that the member variable bill is always equal to the value of the member variable kwh multiplied by the member variable rate?

Any amount of electricity used by a customer (represented by an instance of the customer class) must contribute to the customer's bill (represented by the member variable bill) through the method use Electricity method. An instance of the customer class should never be able to tamper with or decrease the value of the member variable bill.



```
○ A) public void addKWh(double kWh) {
         this.kWh += kWh;
         this.bill = this.kWh*this.rate;
     }

○ B) public void addKWh(double kWh) {
         if (kWh > 0){
             this.kWh += kWh;
             this.bill = this.kWh * this.rate;
         }
     }

○ C) private void addKWh(double kWh) {
         if (kWh > 0) {
             this.kWh += kWh;
             this.bill = this.kWh*this.rate;
         }
     }

○ D) public void addKWh(double kWh) {
         if(kWh > 0) {
             this.kWh += kWh;
             setBill(this.kWh);
         }
     }
     public void setBill(double kWh) {
         bill = kWh*rate;
     }
```

A. Option A

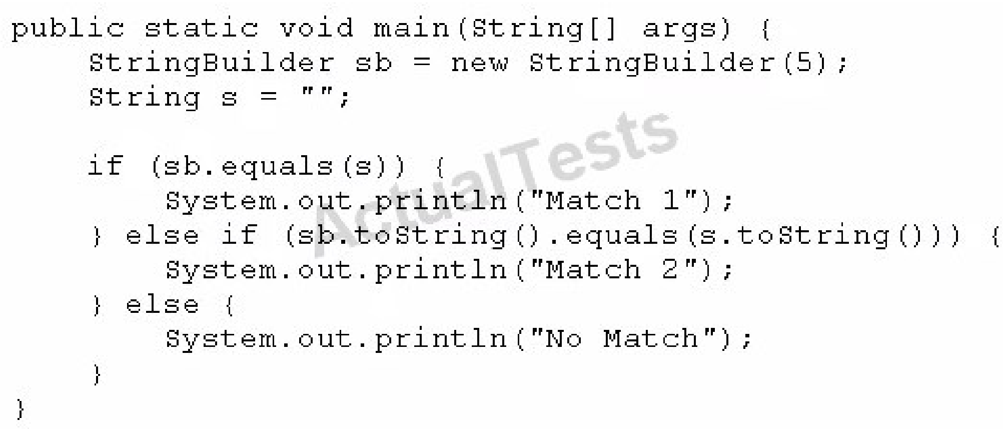
B. Option B

C. Option C

D. Option D

QUESTION NO: 10

Given the code fragment:



```
public static void main(String[] args) {
     StringBuilder sb = new StringBuilder(5);
     String s = "";

     if (sb.equals(s)) {
          System.out.println("Match 1");
     } else if (sb.toString().equals(s.toString())) {
          System.out.println("Match 2");
     } else {
          System.out.println("No Match");
     }
}
```

What is the result?

A. Match 1

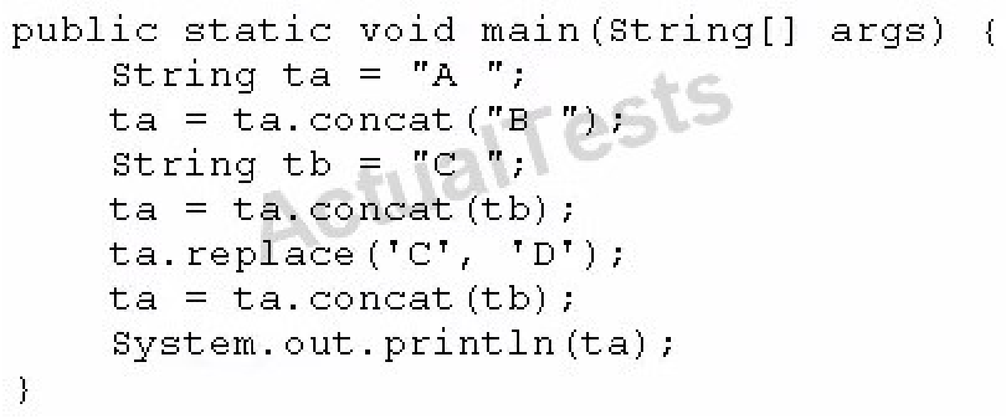
B. Match 2

C. No Match

D. A NullPointerException is thrown at runtime.

QUESTION NO: 12

Given:



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

What is the result?

A. A B C D

B. A C D

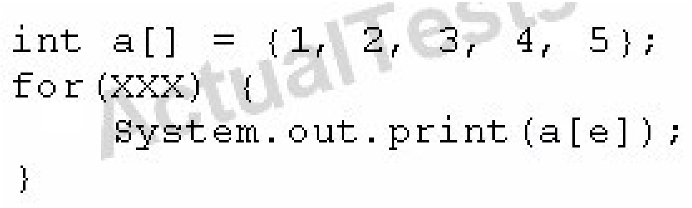
C. A B C C

D. A B D

E. A B D C

QUESTION NO: 14

Given the code fragment:



```
int a[] = {1, 2, 3, 4, 5};
for(XXX) {
    System.out.print(a[e]);
}
```

Which option can replace xxx to enable the code to print 135?

A. int e = 0; e < = 4; e++

B. int e = 0; e < 5; e + = 2

C. int e = 1; e < = 5; e + = 1

D. int e = 1; e < 5; e+ =2

QUESTION NO: 15

Which statement best describes encapsulation?

A. Encapsulation ensures that classes can be designed so that only certain fields and methods of an object are accessible from other objects.

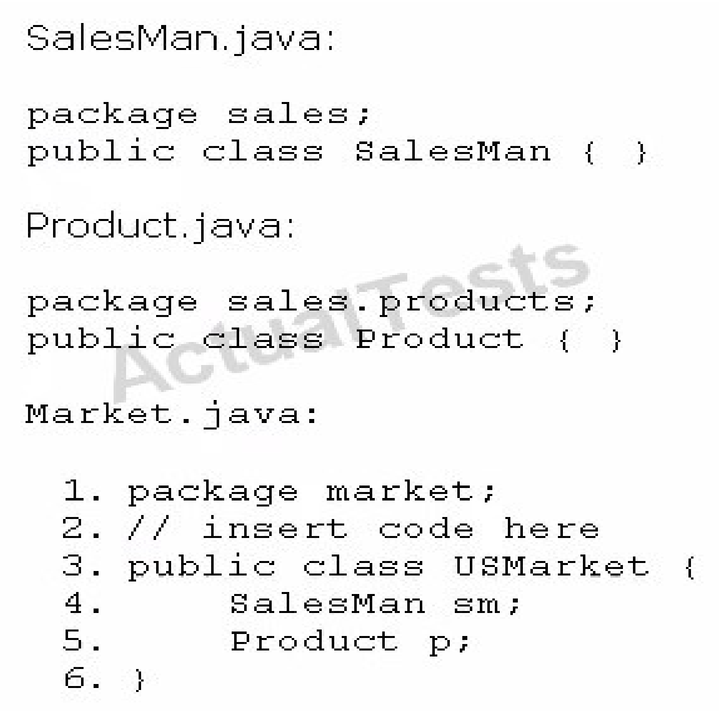
B. Encapsulation ensures that classes can be designed so that their methods are inheritable.

C. Encapsulation ensures that classes can be designed with some fields and methods declared as abstract.

D. Encapsulation ensures that classes can be designed so that if a method has an argument MyType x, any subclass of MyType can be passed to that method.

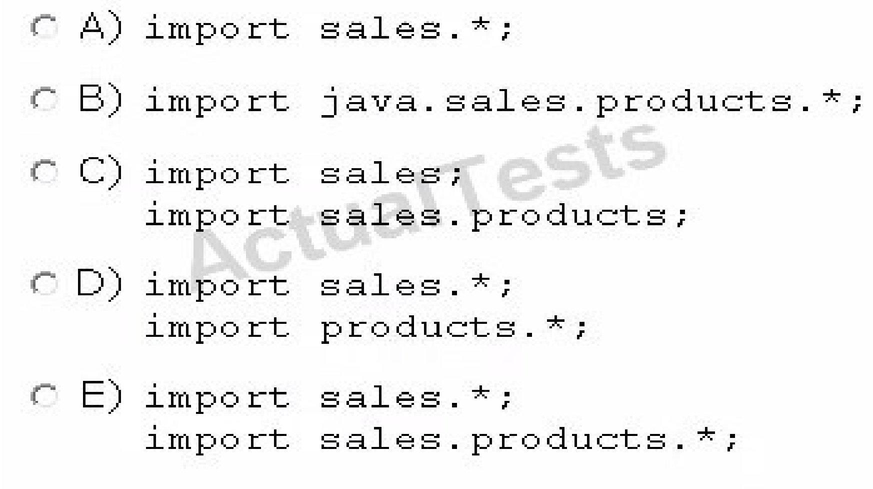
QUESTION NO: 16

Given the code fragment from three files:



```
SalesMan.java:

package sales;
public class SalesMan { }

Product.java:

package sales.products;
public class Product { }

Market.java:

  1. package market;
  2. // insert code here
  3. public class USMarket {
  4.      SalesMan sm;
  5.      Product p;
  6. }
```

Which code fragment, when inserted at line 2, enables the code to compile?



```
○ A) import sales.*;

○ B) import java.sales.products.*;

○ C) import sales;
     import sales.products;

○ D) import sales.*;
     import products.*;

○ E) import sales.*;
     import sales.products.*;
```

A. Option A

B. Option B

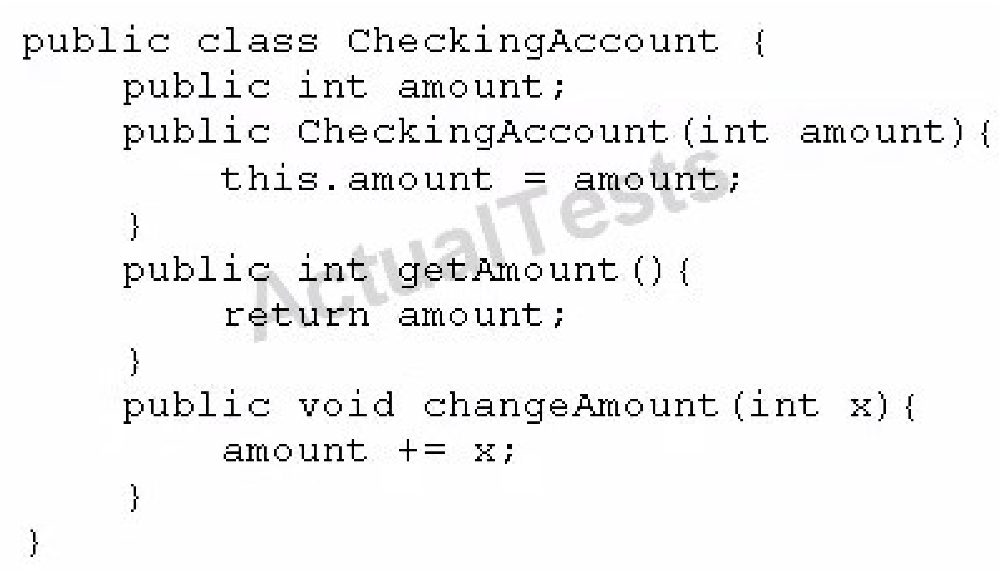
C. Option C

D. Option D

E. Option E

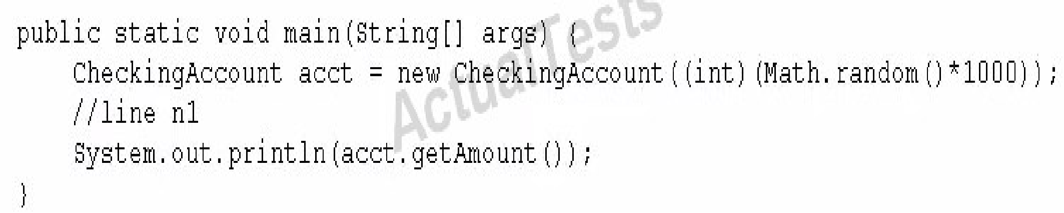
QUESTION NO: 17

Given the following class:



```
public class CheckingAccount {
     public int amount;
     public CheckingAccount(int amount){
         this.amount = amount;
     }
     public int getAmount(){
         return amount;
     }
     public void changeAmount(int x){
         amount += x;
     }
}
```

And given the following main method, located in another class:



```
public static void main(String[] args) {
    CheckingAccount acct = new CheckingAccount((int)(Math.random()*1000));
    //line n1
    System.out.println(acct.getAmount());
}
```

Which three lines, when inserted independently at line n1, cause the program to print a 0 balance?

A. this.amount = 0;

B. amount = 0;

C. acct (0) ;

D. acct.amount = 0;

E. acct. getAmount () = 0;

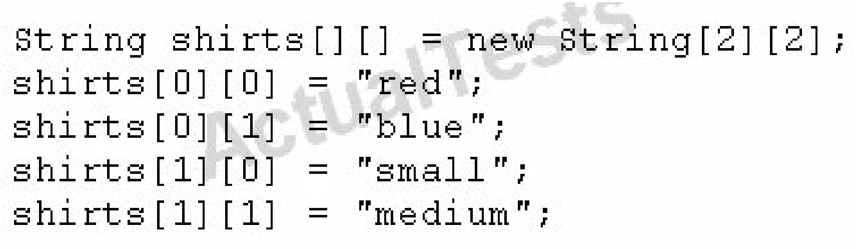
F. acct.changeAmount(0);

G. acct.changeAmount(-acct.amount);

H. acct.changeAmount(-acct.getAmount());

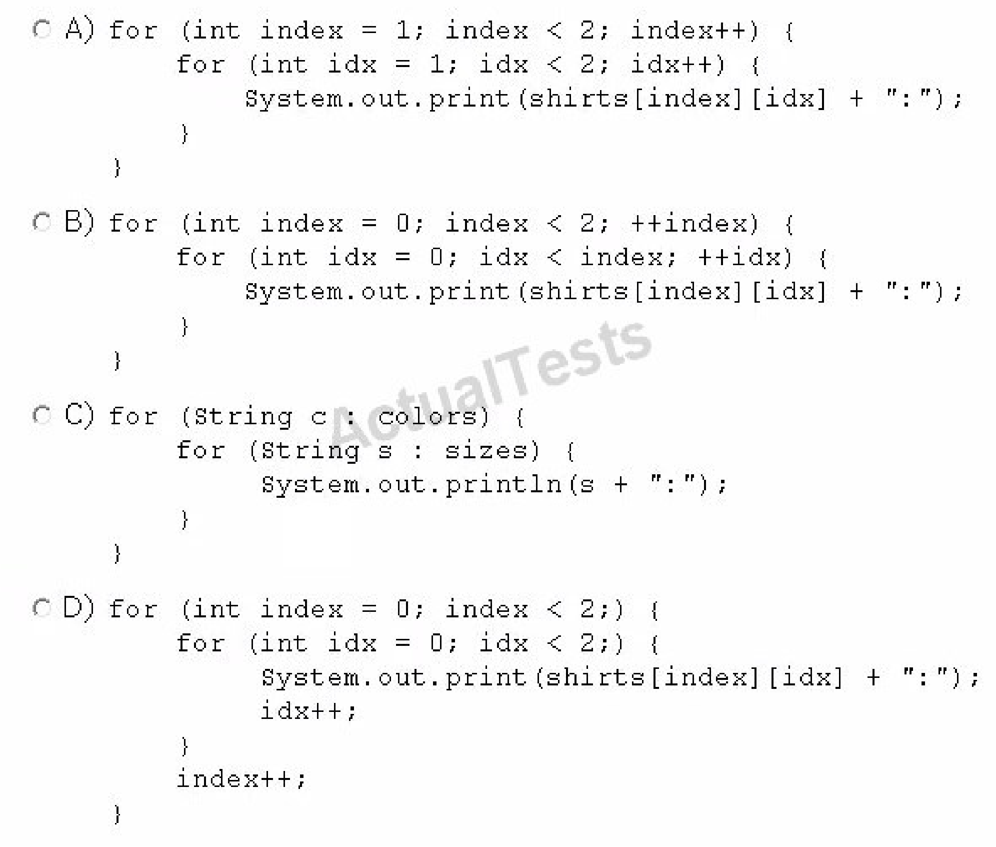
QUESTION NO: 18

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 = 1; index < 2; index++) {
          for (int idx = 1; idx < 2; idx++) {
              System.out.print(shirts[index][idx] + ":");
          }
     }

○ B) for (int index = 0; index < 2; ++index) {
          for (int idx = 0; idx < index; ++idx) {
              System.out.print(shirts[index][idx] + ":");
          }
     }

○ C) for (String c : colors) {
          for (String s : sizes) {
               System.out.println(s + ":");
          }
     }

○ D) for (int index = 0; index < 2;) {
          for (int idx = 0; idx < 2;) {
               System.out.print(shirts[index][idx] + ":");
               idx++;
          }
          index++;
     }
```

A. Option A

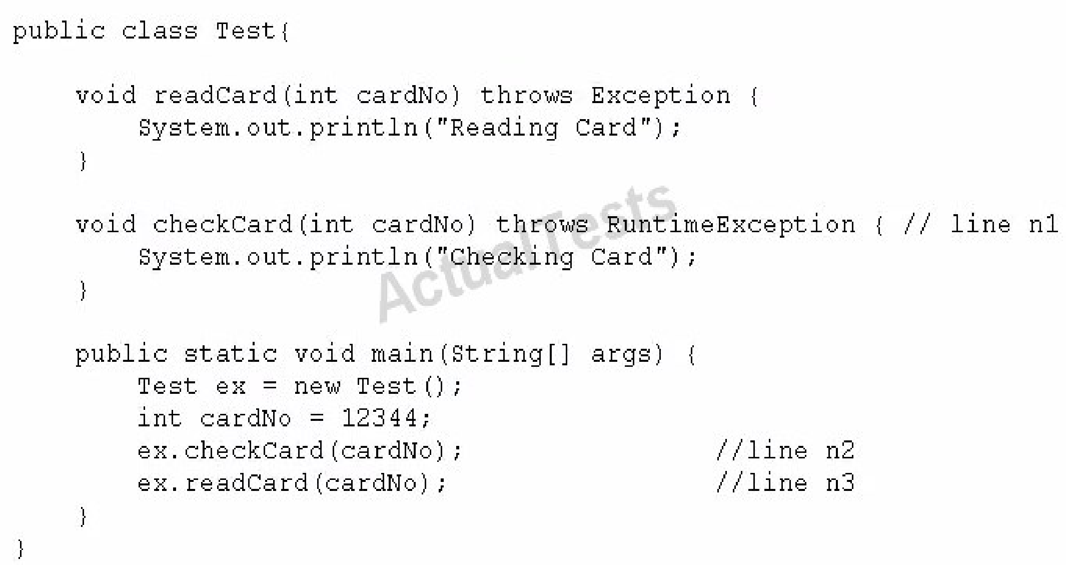
B. Option B

C. Option C

D. Option D

QUESTION NO: 19

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.checkCard(cardNo);                 //line n2
        ex.readCard(cardNo);                  //line n3
    }
}
```

What is the result?

A.
Reading Card
Checking Card

B.
Compilation fails only at line n1.

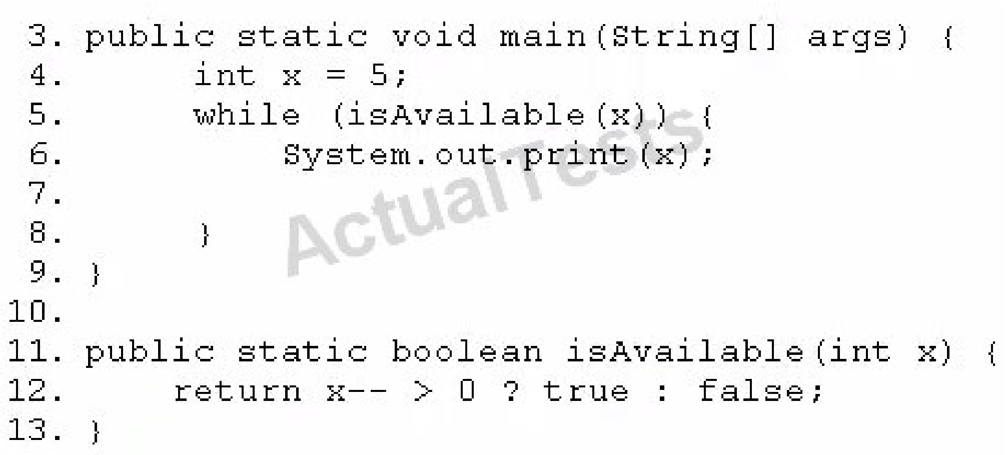
C.
Compilation fails only at line n2.

D.
Compilation fails only at line n3.

E.
Compilation fails at both line n2 and line n3.

QUESTION NO: 20

Given the code fragment:



```
 3. public static void main(String[] args) {
 4.      int x = 5;
 5.      while (isAvailable(x)) {
 6.          System.out.print(x);
 7.
 8.      }
 9. }
10.
11. public static boolean isAvailable(int x) {
12.     return x-- > 0 ? true : false;
13. }
```

Which modification enables the code to print 54321?

A. Replace line 6 with System, out. print (--x) ;

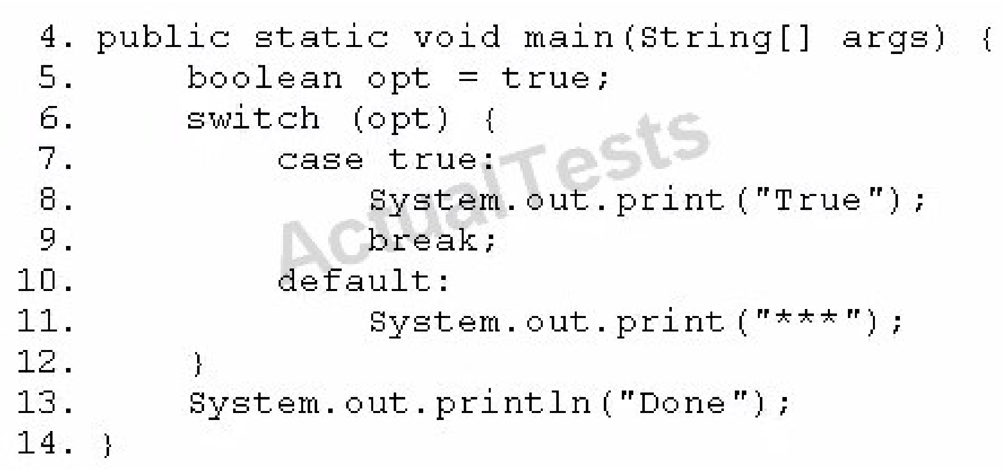
B. At line 7, insert x --;

C. Replace line 6 with --x; and, at line 7, insert system, out. print (x);

D. Replace line 12 With return (x > 0) ? false: true;

QUESTION NO: 21

Given the code fragment:



```
 4. public static void main(String[] args) {
 5.     boolean opt = true;
 6.     switch (opt) {
 7.         case true:
 8.             System.out.print("True");
 9.             break;
10.         default:
11.             System.out.print("***");
12.     }
13.     System.out.println("Done");
14. }
```

Which modification enables the code fragment to print TrueDone?

A.
Replace line 5 With String opt = "true";
Replace line 7 with case "true":

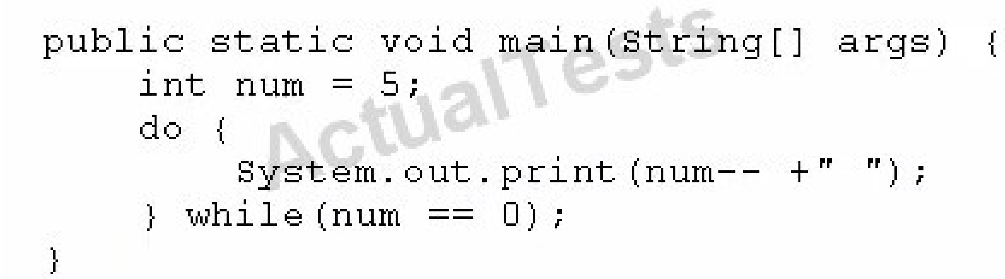
B.
Replace line 5 with boolean opt = l;
Replace line 7 with case 1=

C.
At line 9, remove the break statement.

D.
Remove the default section.

QUESTION NO: 22

Given the following main method:



```
public static void main(String[] args) {
    int num = 5;
    do {
        System.out.print(num-- +" ");
    } while(num == 0);
}
```

What is the result?

A. 5 4 3 2 1 0

B. 5 4 3 2 1

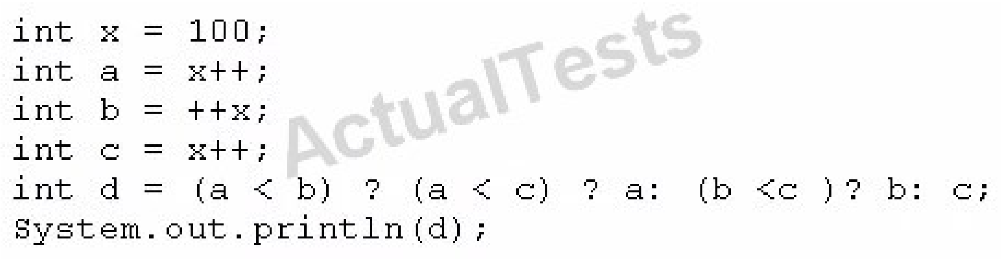
C. 4 2 1

D. 5

E. Nothing is printed

QUESTION NO: 23

Given the code fragment:



```
int x = 100;
int a = x++;
int b = ++x;
int c = x++;
int d = (a < b) ? (a < c) ? a: (b <c )? b: c;
System.out.println(d);
```

What is the result?

A. 100

B. 101

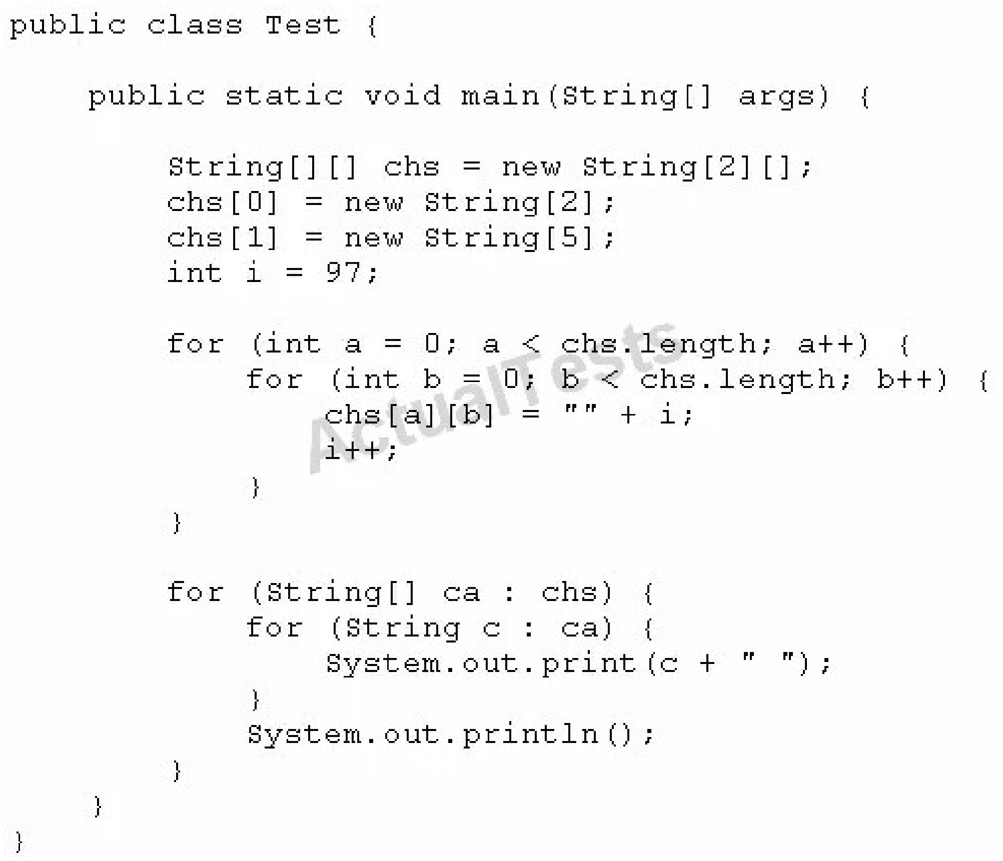
C. 102

D. 103

E. Compilation fails

QUESTION NO: 24

Given:



```
public class Test {

    public static void main(String[] args) {

        String[][] chs = new String[2][];
        chs[0] = new String[2];
        chs[1] = new String[5];
        int i = 97;

        for (int a = 0; a < chs.length; a++) {
            for (int b = 0; b < chs.length; b++) {
                chs[a][b] = "" + i;
                i++;
            }
        }

        for (String[] ca : chs) {
            for (String c : ca) {
                System.out.print(c + " ");
            }
            System.out.println();
        }
    }
}
```

What is the result?

A.
97 98
99 100 null null null

B.
97 98
99 100 101 102 103

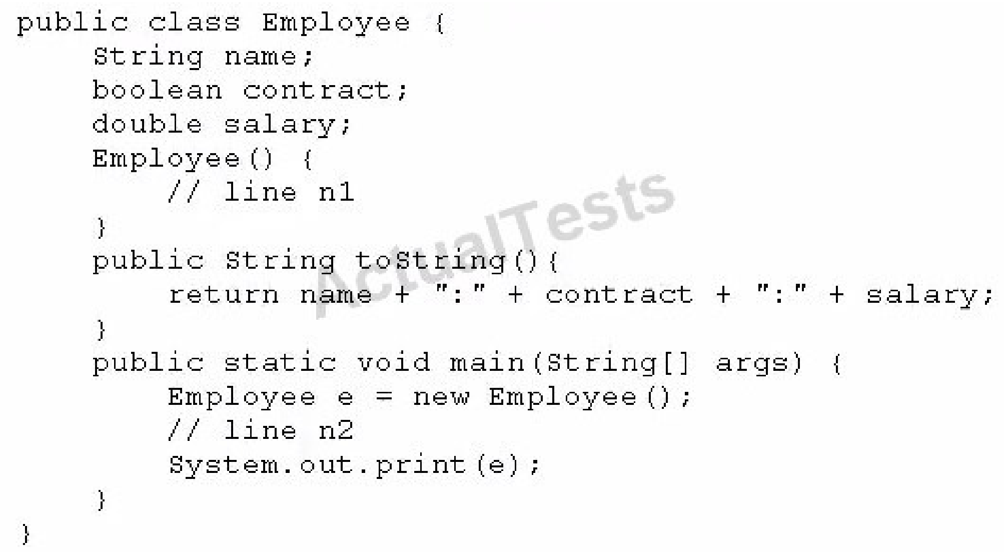
C. Compilation rails.

D. A NullPointerException is thrown at runtime.

E. An ArrayIndexOutOfBoundsException is thrown at runtime.

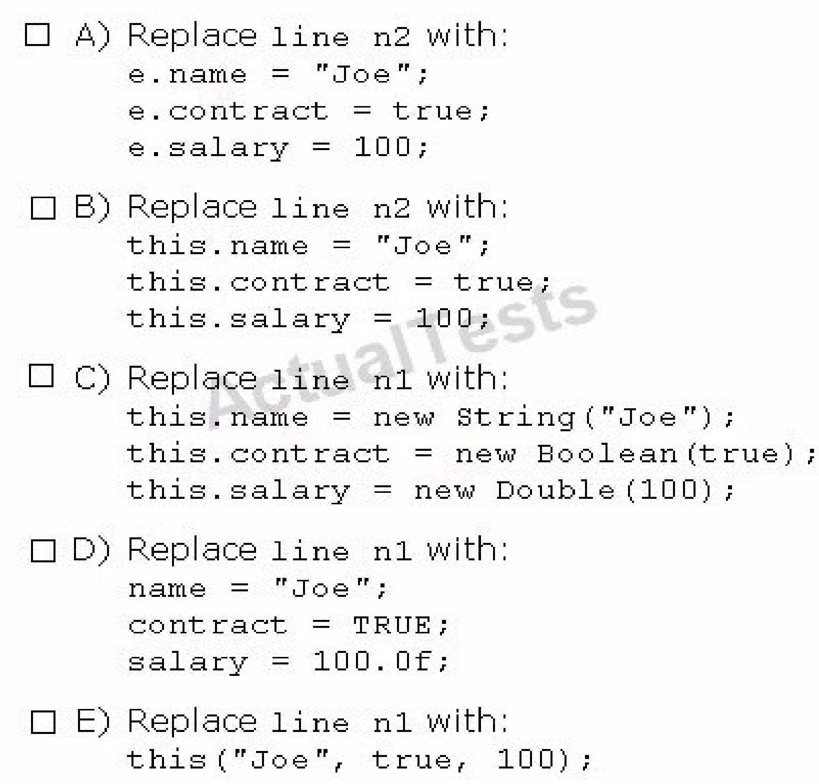
QUESTION NO: 25

Given the code fragment:



```
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) {
         Employee e = new Employee();
         // line n2
         System.out.print(e);
     }
}
```

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



□ A) Replace line n2 with:
```
e.name = "Joe";
e.contract = true;
e.salary = 100;
```

□ B) Replace line n2 with:
```
this.name = "Joe";
this.contract = true;
this.salary = 100;
```

□ C) Replace line n1 with:
```
this.name = new String("Joe");
this.contract = new Boolean(true);
this.salary = new Double(100);
```

□ D) Replace line n1 with:
```
name = "Joe";
contract = TRUE;
salary = 100.0f;
```

□ E) Replace line n1 with:
```
this("Joe", true, 100);
```

A. Option A

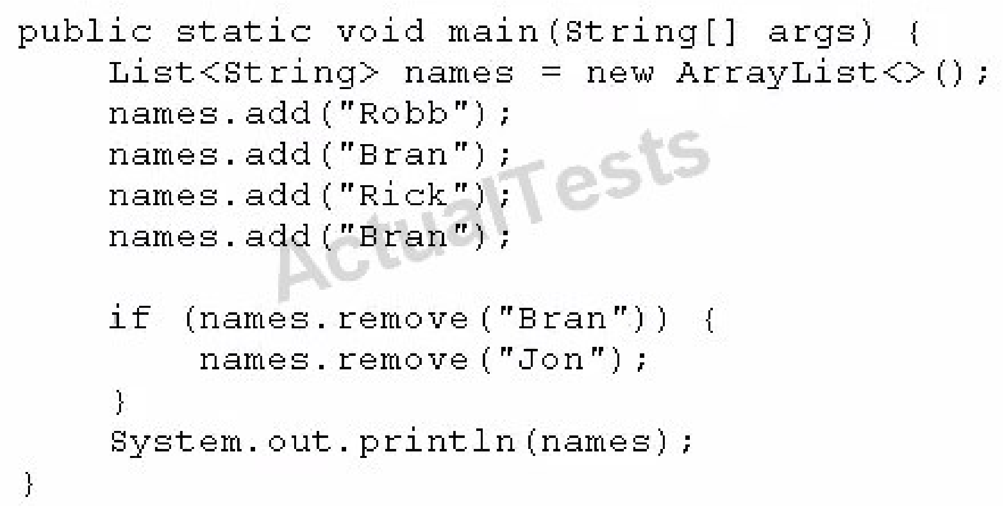
B. Option B

C. Option C

D. Option D

E. Option E

QUESTION NO: 26 Given the code fragment:



```
public static void main(String[] args) {
    List<String> names = new ArrayList<>();
    names.add("Robb");
    names.add("Bran");
    names.add("Rick");
    names.add("Bran");

    if (names.remove("Bran")) {
        names.remove("Jon");
    }
    System.out.println(names);
}
```

What is the result?

A. [Robb, Rick, Bran]

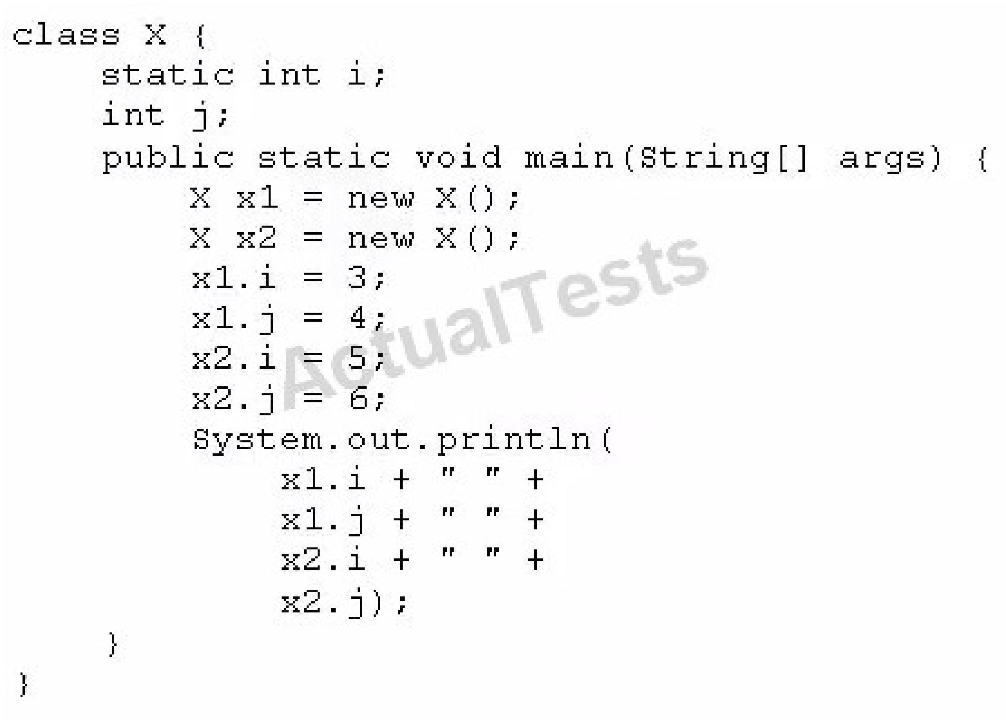
B. [Robb, Rick]

C. [Robb, Bran, Rick, Bran]

D. An exception is thrown at runtime.

QUESTION NO: 28

Given:



```
class X {
    static int i;
    int j;
    public static void main(String[] args) {
        X x1 = new X();
        X x2 = new X();
        x1.i = 3;
        x1.j = 4;
        x2.i = 5;
        x2.j = 6;
        System.out.println(
            x1.i + " " +
            x1.j + " " +
            x2.i + " " +
            x2.j);
    }
}
```

What is the result?

A. 3 4 5 6

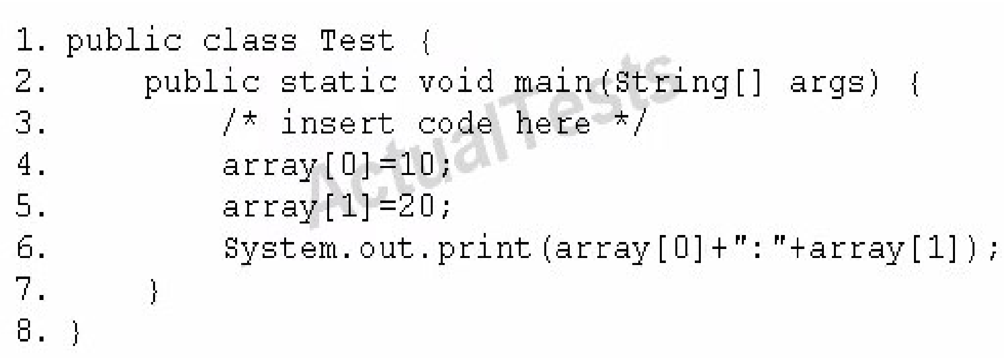
B. 3 4 3 6

C. 5 4 5 6

D. 3 6 4 6

QUESTION NO: 29

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 n= new int[2];

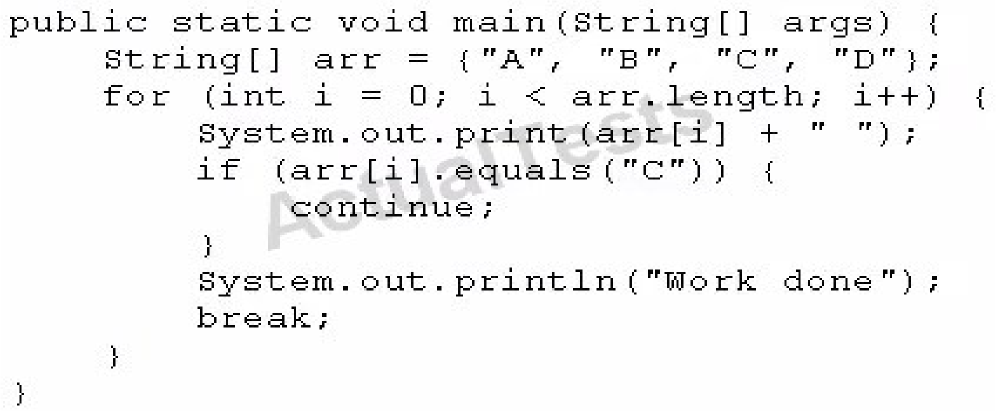
B. int[] array;
array = new int[2];

C. int array = new int[2];

D. int array [2] ;

QUESTION NO: 30

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("C")) {
            continue;
        }
        System.out.println("Work done");
        break;
    }
}
```

What is the result?

A. A B C Work done

B. A B C D Work done

C. A Work done

D. Compilation fails

QUESTION NO: 31

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 the possible errors

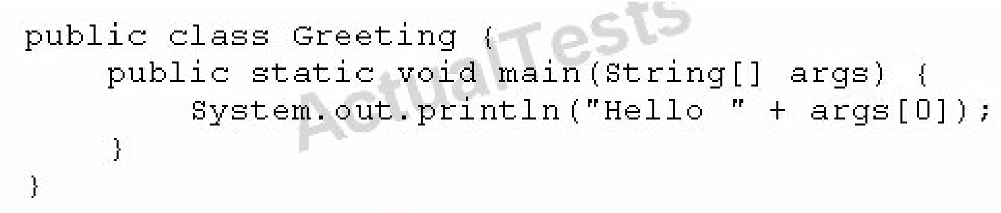
C. Improves the program structure because the programmer can choose where to handle exceptions

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 tailored to the particular program being created

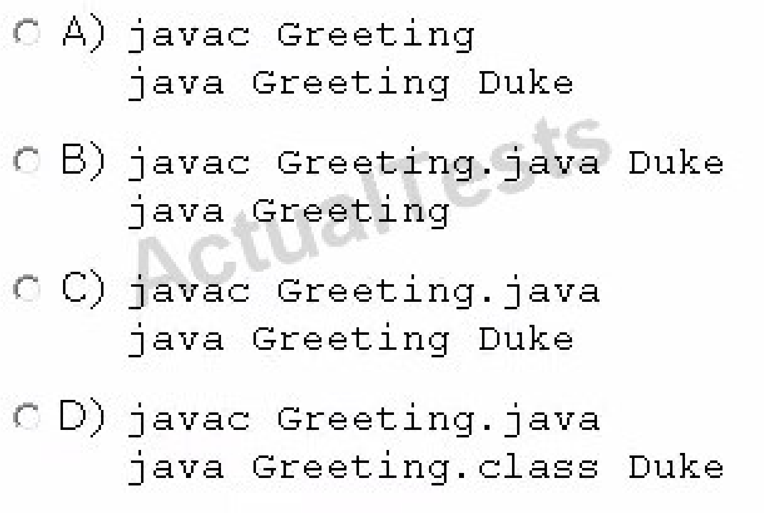
QUESTION NO: 32

Given the code from the Greeting.Java file:



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

Which set of commands prints Hello Duke in the console?



```
○ A) javac Greeting
     java Greeting Duke

○ B) javac Greeting.java Duke
     java Greeting

○ C) javac Greeting.java
     java Greeting Duke

○ D) javac Greeting.java
     java Greeting.class Duke
```

A. Option A

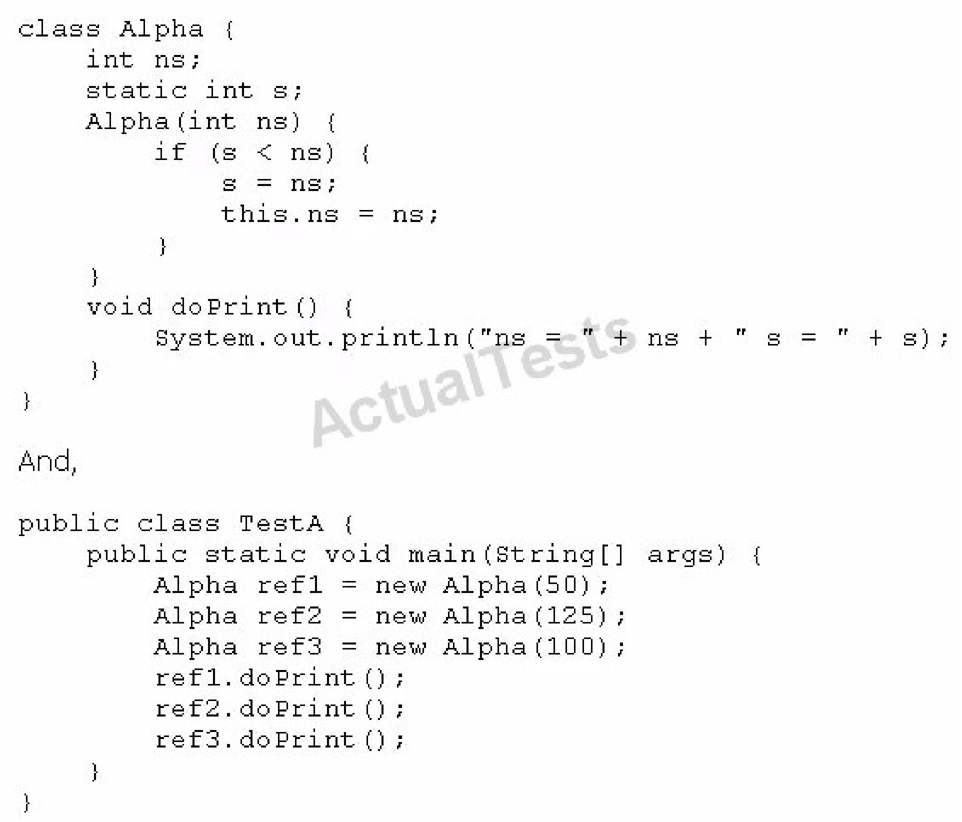
B. Option B

C. Option C

D. Option D

QUESTION NO: 33

Given:

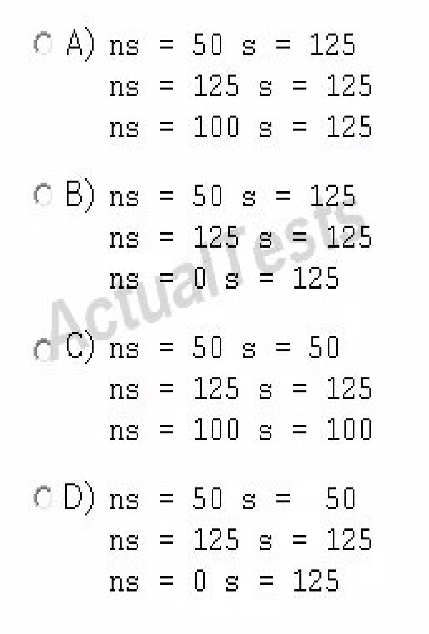


```
class Alpha {
    int ns;
    static int s;
    Alpha(int ns) {
        if (s < ns) {
            s = ns;
            this.ns = ns;
        }
    }
    void doPrint() {
        System.out.println("ns = " + ns + " s = " + s);
    }
}
```

And,

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

What is the result?



```
○ A) ns = 50 s = 125
     ns = 125 s = 125
     ns = 100 s = 125

○ B) ns = 50 s = 125
     ns = 125 s = 125
     ns = 0 s = 125

○ C) ns = 50 s = 50
     ns = 125 s = 125
     ns = 100 s = 100

○ D) ns = 50 s =  50
     ns = 125 s = 125
     ns = 0 s = 125
```

A. Option A

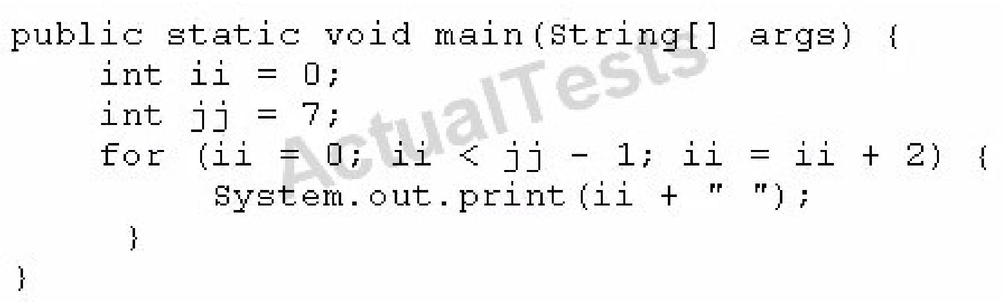
B. Option B

C. Option C

D. Option D

QUESTION NO: 34

Given the code fragment:



```
public static void main(String[] args) {
    int ii = 0;
    int jj = 7;
    for (ii = 0; ii < jj - 1; ii = ii + 2) {
        System.out.print(ii + " ");
     }
}
```

What is the result?

A. 2 4

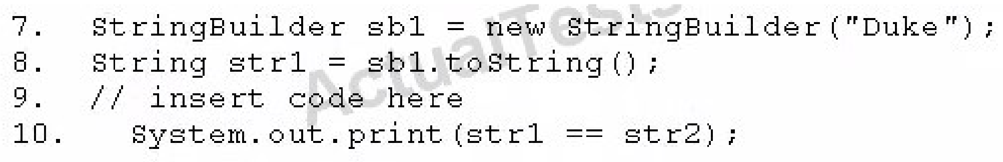
B. 0 2 4 6

C. 0 2 4

D. Compilation fails

QUESTION NO: 36

Given the code fragment:



```
7.  StringBuilder sb1 = new StringBuilder("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 = str1;

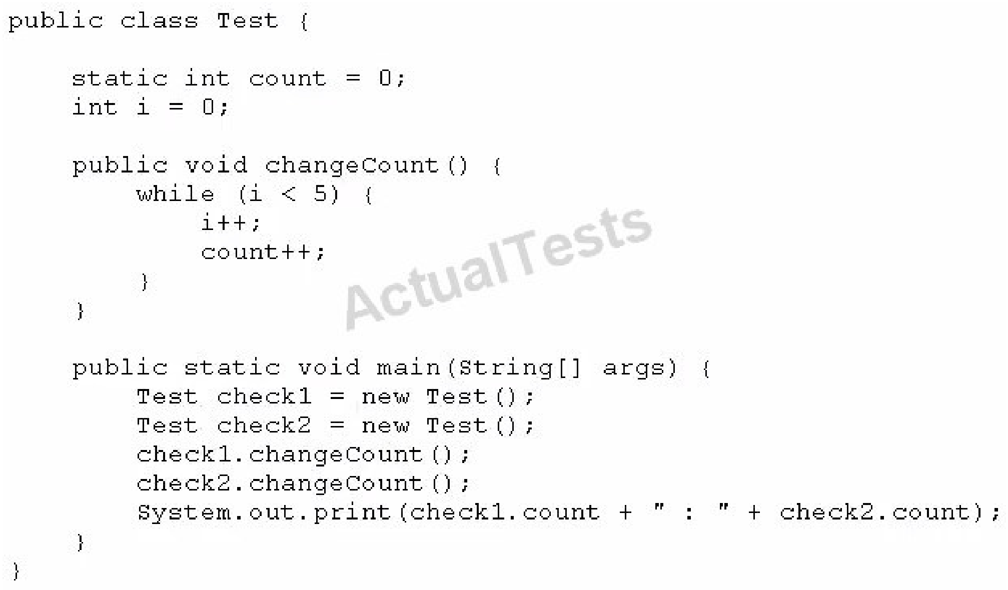
B. String str2 = new String (str1);

C. String str2 = sb1. toString ();

D. String str2 = "Duke";

QUESTION NO: 37

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. 10 : 10

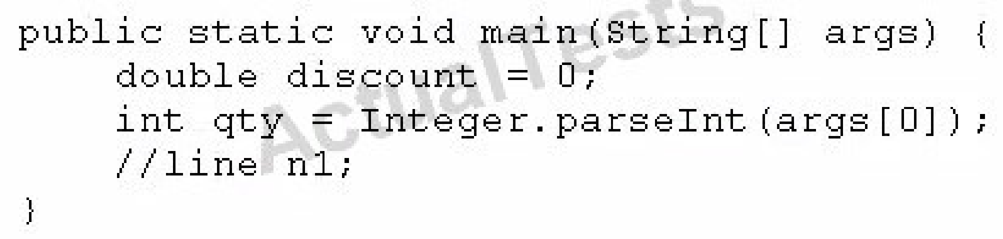
B. 5 : 5

C. 5 : 10

D. Compilation fails

QUESTION NO: 38

Given the code fragment:



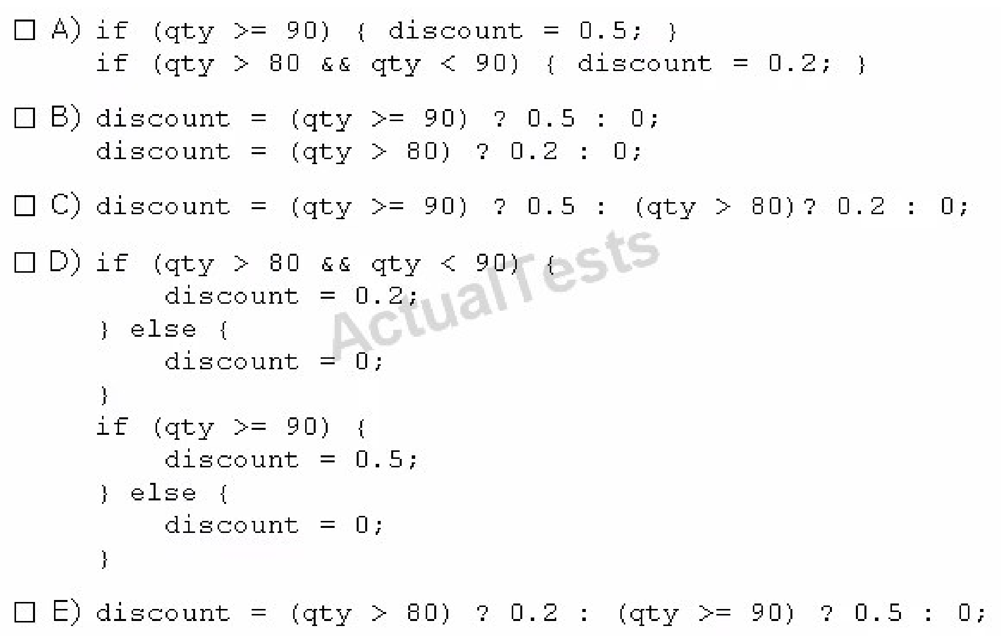
```
public static void main(String[] args) {
    double discount = 0;
    int qty = Integer.parseInt(args[0]);
    //line n1;
}
```

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) if (qty >= 90) { discount = 0.5; }
     if (qty > 80 && qty < 90) { discount = 0.2; }

□ B) discount = (qty >= 90) ? 0.5 : 0;
     discount = (qty > 80) ? 0.2 : 0;

□ C) discount = (qty >= 90) ? 0.5 : (qty > 80)? 0.2 : 0;

□ D) if (qty > 80 && qty < 90) {
         discount = 0.2;
     } else {
         discount = 0;
     }
     if (qty >= 90) {
         discount = 0.5;
     } else {
         discount = 0;
     }

□ E) discount = (qty > 80) ? 0.2 : (qty >= 90) ? 0.5 : 0;
```

A. Option A

B. Option B

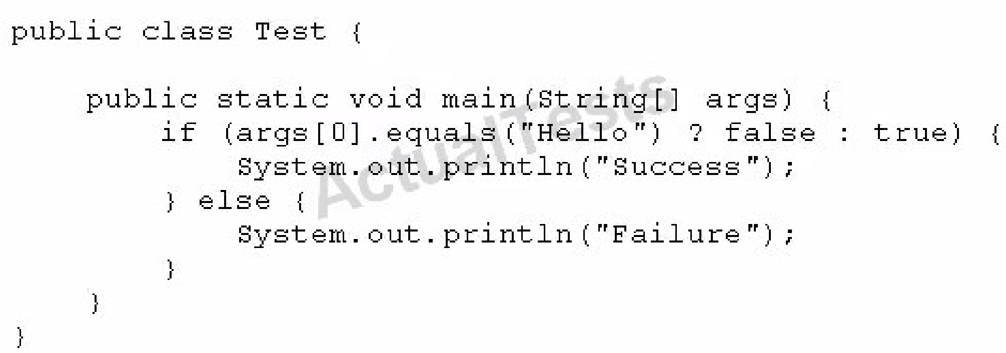
C. Option C

D. Option D

E. Option E

QUESTION NO: 39

Given:



```
public class Test {

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

And given the commands:

javac Test.Java
java Test Hello

What is the result?

A. Success

B. Failure

C. Compilation fails.

D. An exception is thrown at runtime

QUESTION NO: 40

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

A. Objects cannot be reused.

B. A subclass can inherit from a superclass.

C. Objects can share behaviors with other objects.

D. A package must contain more than one class.

E. Object is the root class of all other objects.

F. A main method must be declared in every class.