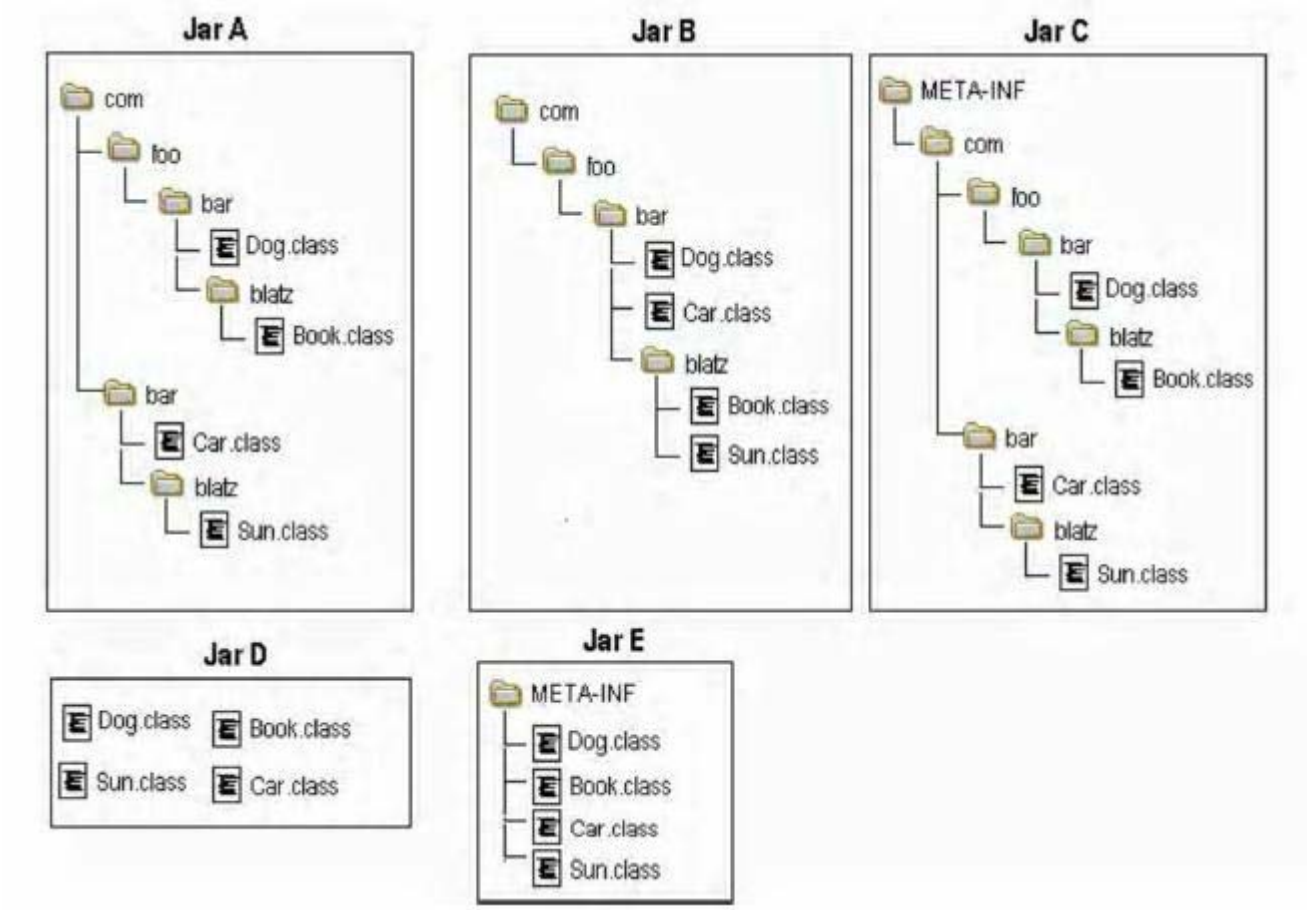
Exam A

QUESTION 1
Given the following JARs:



and given the fully-qualified class names:

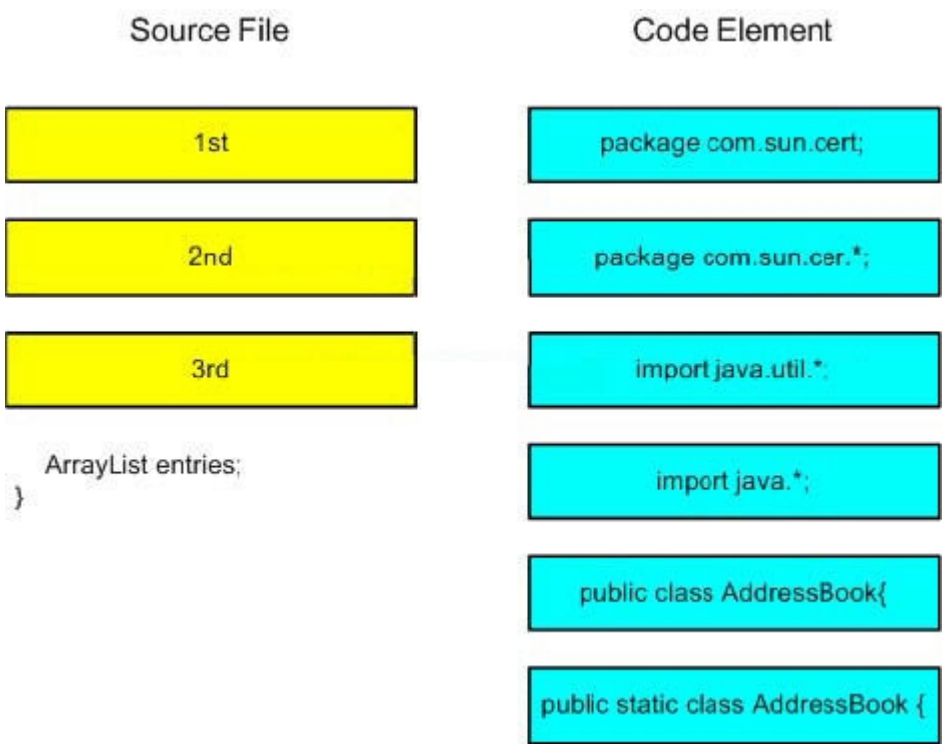
com.foo.bar.Dog
com.foo.bar.blatz.Book
com.bar.Car
com.bar.blatz.Sun

Which graph represents the correct directory structure for a JAR file from which those classes can be used by the compiler and JVM?

A. Jar A
B. Jar B
C. Jar C
D. Jar D
E. Jar E

QUESTION 2
Place the code elements in order so that the resulting Java source file will compile correctly, resulting in a class called com.sun.cert.AddressBook.

Select and Place:



QUESTION 3
Given the following directory structure:

```
org
| -- Robot.class
|
| -- ex
      |-- Pet.class
      |
      |-- why
          |-- Dog.class
```

And the following source file:

```
class MyClass {
  Robot r;
  Pet p;
  Dog d;
}
```

Which statement(s) must be added for the source file to compile? (Choose all that apply.)

A. package org;
B. import org.*;
C. package org.*;
D. package org.ex;
E. import org.ex.*;
F. package org.ex.why;
G. package org.ex.why.Dog;

QUESTION 4
A class games.cards.Poker is correctly defined in the jar file Poker.jar.
A user wants to execute the main method of Poker on a UNIX system using the command:

java games.cards.Poker

What allows the user to do this?

A. Put Poker.jar in directory /stuff/java, and set the CLASSPATH to include /stuff/java
B. Put Poker.jar in directory /stuff/java, and set the CLASSPATH to include /stuff/java/*.jar
C. Put Poker.jar in directory /stuff/java, and set the CLASSPATH to include /stuff/java/Poker.jar
D. Put Poker.jar in directory /stuff/java/games/cards, and set the CLASSPATH to include /stuff/java
E. Put Poker.jar in directory /stuff/java/games/cards, and set the CLASSPATH to include /stuff/java/*.jar
F. Put Poker.jar in directory /stuff/java/games/cards, and set the CLASSPATH to include /stuff/java/Poker.jar

QUESTION 5
A UNIX user named Bob wants to replace his chess program with a new one, but he is not sure where the old one is installed. Bob is currently able to run a Java chess program starting from his home directory /home/bob using the command:

java -classpath /test:/home/bob/downloads/* .jar games.Chess

Bob's CLASSPATH is set (at login time) to:
/usr/lib:/home/bob/classes:/opt/java/lib:/opt/java/lib/* .jar

What is a possible location for the Chess.class file?

A. /test/Chess.class
B. /home/bob/Chess.class
C. /test/games/Chess.class
D. /usr/lib/games/Chess.class
E. /home/bob/games/Chess.class
F. inside jarfile /opt/java/lib/Games.jar (with a correct manifest)
G. inside jarfile /home/bob/downloads/Games.jar (with a correct manifest)

QUESTION 6
Given:
```
1. package com.company.application;
2.
3.    public class MainClass {
4.        public static void main(String[] args) { }
5. }
```

And MainClass exists in the /apps/com/company/application directory.
Assume the CLASSPATH environment variable is set to "." (current directory).
Which two java commands entered at the command line will run MainClass? (Choose two.)

A. java MainClass if run from the /apps directory
B. java com.company.application.MainClass if run from the /apps directory
C. java -classpath /apps com.company.application.MainClass if run from any directory
D. java -classpath . MainClass if run from the /apps/com/company/application directory
E. java -classpath /apps/com/company/application:. MainClass if run from the /apps directory
F. java com.company.application.MainClass if run from the /apps/com/company/application directory

QUESTION 7
If three versions of MyClass.class exist on a file system:

Version 1 is in /foo/bar
Version 2 is in /foo/bar/baz

Version 3 is in /foo/bar/baz/bing

And the system's classpath includes:

/foo/bar/baz

And this command line is invoked from /foo

java -classpath /foo/bar/baz/bing:/foo/bar MyClass

Which version will be used by javac?

A. /foo/MyClass.class
B. /foo/bar/MyClass.class
C. /foo/bar/baz/MyClass.class
D. /foo/bar/baz/bing/MyClass.class
E. The result is not predictable.

QUESTION 8
Given a correctly compiled class whose source code is:

```
1. package com.sun.sjcp;
2.
3. public class Commander {
4.     public static void main(String[] args) {
5.         // more code here
6.     }
7. }
```

Assume that the class file is located in /foo/com/sun/sjcp/, the current directory is /foo/, and that the classpath contains "." (current directory). Which command line correctly runs Commander?

A. java Commander
B. java com.sun.sjcp.Commander
C. java com/sun/sjcp/Commander
D. java -cp com.sun.sjcp Commander
E. java -cp com/sun/sjcp Commander

QUESTION 9
A developer is creating a class Book, that needs to access class Paper.

The Paper class is deployed in a JAR named myLib.jar.

Which three, taken independently, will allow the developer to use the Paper class while compiling the Book class? (Choose three.)

A. The JAR file is located at $JAVA_HOME/jre/classes/myLib.jar
B. The JAR file is located at $JAVA_HOME/jre/lib/ext/myLib.jar
C. The JAR file is located at /foo/myLib.jar and a classpath environment variable is set that includes /foo/myLib.jar/Paper.class
D. The JAR file is located at /foo/myLib.jar and a classpath environment variable is set that includes /foo/myLib.jar
E. The JAR file is located at /foo/myLib.jar and the Book class is compiled using javac - cp /foo/myLib.jar/Paper Book.java
F. The JAR file is located at /foo/myLib.jar and the Book class is compiled using javac -d /foo/myLib.jar Book.java
G. The JAR file is located at /foo/myLib.jar and the Book class is compiled using javac - classpath /foo/

myLib.jar Book.java

QUESTION 10
Given the following directory structure:

```
bigProject
  |--source
  |     |--Utils.java
  |
  |--classes
```

And the following command line invocation:

```
javac -d classes source/Utils.java
```

Assume the current directory is bigProject, what is the result?

A. If the compile is successful, Utils.class is added to the source directory.
B. The compiler returns an invalid flag error.
C. If the compile is successful, Utils.class is added to the classes directory.
D. If the compile is successful, Utils.class is added to the bigProject directory.

QUESTION 11
Given the default classpath:

```
/foo
```

And this directory structure:

```
foo
 |
 test
   |
   xcom
     |--A.class
     |--B.java
```

And these two files:

```
package xcom;
public class A { }
```

```
package xcom;
public class B {
 A a;
}
```

Which allows B.java to compile? (Choose all that apply.)

A. Set the current directory to xcom then invoke
   `javac B.java`
B. Set the current directory to xcom then invoke
   `javac -classpath . B.java`
C. Set the current directory to test then invoke
   `javac -classpath . xcom/B.java`
D. Set the current directory to test then invoke
   `javac -classpath xcom B.java`
E. Set the current directory to test then invoke
   `javac -classpath xcom:. B.java`

QUESTION 12
Given the following directory structure:

```
x-|
  |- FindBaz.class
  |
  |- test-|
          |- Baz.class
          |
          |- myApp-|
                   |- Baz.class
```

And given the contents of the related .java files:

```
1. public class FindBaz {
2.        public static void main(String[] args) { new Baz(); }
3. }
```

In the test directory:

```
1. public class Baz {
2.        static { System.out.println("test/Baz"); }
3. }
```

In the myApp directory:

```
1. public class Baz {
2.        static { System.out.println("myApp/Baz"); }
3. }
```

If the current directory is x, which invocations will produce the output "test/Baz"? (Choose all that apply.)

A. `java FindBaz`
B. `java -classpath test FindBaz`
C. `java -classpath .:test FindBaz`
D. `java -classpath .:test/myApp FindBaz`
E. `java -classpath test:test/myApp FindBaz`
F. `java -classpath test:test/myApp:. FindBaz`
G. `java -classpath test/myApp:test:. FindBaz`

QUESTION 13
Given the following directory structure:

```
test-|
     |- GetJar.java
     |
     |- myApp-|
              |-Foo.java
```

And given the contents of GetJar.java and Foo.java:

```
3. public class GetJar {
4.     public static void main(String[] args) {
5.           System.out.println(myApp.Foo.d);
6.     }
7. }
```

```
3. package myApp;
4. public class Foo { public static int d = 8; }
```

If the current directory is "test", and myApp/Foo.class is placed in a JAR file called MyJar.jar located in

test, which set(s) of commands will compile GetJar.java and produce the output 8? (Choose all that apply.)

A.
```
javac -classpath MyJar.jar GetJar.java
java -classpath MyJar.jar:. GetJar
```
B.
```
javac MyJar.jar GetJar.java
java GetJar
```
C.
```
javac -classpath MyJar.jar GetJar.java
java -classpath MyJar.jar GetJar
```
D.
```
javac MyJar.jar GetJar.java
java -classpath MyJar.jar GetJar
```

QUESTION 14
Given the following directory structure:

```
x-|
  |- GoDeep.class
  |
  |- test-|
          |- MyJar.jar
          |
          |- myApp-|
                   |-Foo.java
                   |-Foo.class
```

And given the contents of GoDeep.java and Foo.java:

```
3. public class GoDeep {
4.     public static void main(String[] args) {
5.         System.out.println(myApp.Foo.d);
6.     }
7. }
3. package myApp;
4. public class Foo { public static int d = 8; }
```

And MyJar.jar contains the following entry:

```
myApp/Foo.class
```

If the current directory is x, which commands will successfully execute GoDeep.class and produce the output 8? (Choose all that apply.)

A. `java GoDeep`
B. `java -classpath . GoDeep`
C. `java -classpath test/MyJar.jar GoDeep`
D. `java GoDeep -classpath test/MyJar.jar`
E. `java GoDeep -classpath test/MyJar.jar:.`
F. `java -classpath .:test/MyJar.jar GoDeep`
G. `java -classpath test/MyJar.jar:. GoDeep`