

1

fc957400.JaSE8PrI.SG.2.11

How many case statements can a single `switch` statement have?

Barring any VM limits, there is no limit to the number of case statements that a `switch` statement can have, provided the constant value of each case statement is unique.

2

fc957400.JaSE8PrI.SG.2.23

Write code to print the number of elements in an `ArrayList` named `abc`.

```
System.out.println(abc.size());
```

3

fc957400.JaSE8PrI.SG.2.50

True or false: An abstract class that implements an interface is not required to implement any of the interface's abstract methods.

True.

4

fc957400.JaSE8PrI.SG.2.36

Write a static import to import the static `LENGTH` variable of `a.b.C`.

```
import static a.b.C.LENGTH; or import static a.b.C.*;
```

5

fc957400.JaSE8PrI.SG.1.06

Which variables require the programmer to initialize them before use:
Class, Local or Instance?

Local

6

fc957400.JaSE8PrI.SG.2.02

What is the most common signature of a `main()` method?

```
public static void main(String[] args)
```

7

fc957400.JaSE8PrI.SG.1.50

What modifier(s) do all members of an interface implicitly have?

public

8

fc957400.JaSE8Pri.SG.1.40

What code can call the method `void print() {}`?

Code in the same package.

9

fc957400.JaSE8Pri.SG.1.63

If a `try` statement has both a `catch` block and a `finally` block, which order do they run in if an exception is not thrown?

`try` followed by `finally`

10

fc957400.JaSE8Pri.SG.1.31

How many objects are created in `String[] s = new String[5];`?

Just one. The references are all set to `null` by default.

11

fc957400.JaSE8Pri.SG.2.08

Are instance initializers run before or after the constructor?

Before. Instance initializer are blocks of code that are run before the constructor.

12

fc957400.JaSE8Pri.SG.2.21

How many arrays are created in this code and how many dimensions is each one? `int[] b, c[];`

Two. `b` is a one-dimensional array and `c` is a two-dimensional array.

13

fc957400.JaSE8Pri.SG.2.04

What order do the class declarations, import statements, and package declaration go within a file?

The package declaration comes first, followed by imports, followed by the class declaration.

14

fc957400.JaSE8Pri.SG.1.07

Which variables are in scope for the entire program: Class, Local or Instance?

Class

15

fc957400.JaSE8Pri.SG.1.27

What is in the `StringBuilder` created by new `StringBuilder("surprise").insert(3, "!!")`?

sur!!prise

16

fc957400.JaSE8Pri.SG.2.15

True or false: The collection in a `for` loop must be an array.

False. It can be an array or an object that implements `java.lang.Iterable`.

17

fc957400.JaSE8Pri.SG.1.52

What keyword would be used for a class that uses an interface?

implements

18

fc957400.JaSE8Pri.SG.1.36

What character separates parameters in a parameter list?

Comma (,)

19

fc957400.JaSE8Pri.SG.1.38

What is wrong with `public void method(String... s, int... b) {}`?

A vararg parameter must be the last parameter in a parameter list and only one is allowed per method.

20

fc957400.JaSE8Pri.SG.1.15

True or false: The break or continue statement requires a semicolon when used without optional labels.

True

21

fc957400.JaSE8Pri.SG.2.32

How do you create a Period of a month and a day?

`Period.of(0, 1, 1);`

22

fc957400.JaSE8Pri.SG.1.20

Which are immutable: String, StringBuilder, StringBuffer, arrays, or ArrayList?

Strings are the only immutable objects in the list.

23

fc957400.JaSE8Pri.SG.2.38

Which of the following may be different in an overloaded method: method name, return type, access modifier, exception list?

return type, access modifier, and exception list may vary. If the method name was different, it would be a different method rather than an overloaded method.

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fc957400.JaSE8Pri.SG.1.10

Which of the following classes do `import a.b.*` actually import: a.A, a.b.B, a.b.c.C?

Only a.b.B. The import wildcard only matches in that package directly, not subpackages.

25

fc957400.JaSE8Pri.SG.2.57

Define a covariant return type.

When a method in a child class overrides a method in a parent class, the return type is permitted to be a subclass of the return type of the method defined in the parent class.

26

fc957400.JaSE8Pri.SG.2.26

What method do you call on an `ArrayList` to replace the element at a given index with a different one?

`set()`

27

fc957400.JaSE8Pri.SG.1.59

When do you use the `throw` and `throws` keywords?

`throw` is used when throwing an exception. `throws` is used in a method declaration.

28

fc957400.JaSE8Pri.SG.2.63

Which of the following exceptions are typically thrown by the programmer (and not the JVM)? `ArrayIndexOutOfBoundsException`, `ClassCastException`, `IllegalArgumentException`, `NumberFormatException`

`IllegalArgumentException` and `NumberFormatException`

29

fc957400.JaSE8Pri.SG.2.01

The bytecode for a class named `Hello` in the `a.b.c` package must appear in what directory structure?

The file `Hello.class` must be in the subdirectory `a/b/c`.

30

fc957400.JaSE8Pri.SG.1.32

Write a line of code to print the number of elements in `int abc[] = new int[9];`.

`System.out.println(abc.length);`

31

fc957400.JaSE8Pri.SG.1.37

When is a return statement not required in a method?

When the return type is void.

32

fc957400.JaSE8Pri.SG.2.53

How would you override a private method in Java?

You cannot override a private method, although you can replace it by hiding it.

33

fc957400.JaSE8Pri.SG.1.05

What characters may a variable name contain?

A letter, number, dollar sign or underscore

34

fc957400.JaSE8Pri.SG.2.14

True or false: A case must be a constant expression.

True

35

fc957400.JaSE8Pri.SG.1.48

What are the four types of members an interface may include?

Abstract methods, default methods, static methods, and static final variables

36

fc957400.JaSE8Pri.SG.1.24

What does this code print? `String s = "hmm"; s.substring(1);`
`System.out.println(s);`

hmm. The result of the substring is not stored anywhere and strings are immutable so s itself is not saved.

37

fc957400.JaSE8Pri.SG.2.54

When do you need to explicitly call `super()` in your constructor?

When the parent class does not define a no-argument constructor.

38

fc957400.JaSE8Pri.SG.1.08

Which variables may have a scope smaller than a method: Class, Local or Instance?

Local

39

fc957400.JaSE8Pri.SG.2.07

Is this a constructor or a method? `public void MyClass() { }`

It is a method (not a constructor) because it has a return type.

40

fc957400.JaSE8Pri.SG.1.53

What keyword would be used for a class that extends an interface?

Trick question! A class cannot extend an interface.

41

fc957400.JaSE8Pri.SG.1.19

What does `System.out.println(1 + 2 + "3" + 4 + 5);` print?

3345. It is evaluated as `1 + 2` becomes `3`, then `3 + "3"` becomes `"33"`, then `"33" + 4` becomes `"334"`, and finally `"334" + 5` becomes `"3345"`.
The quotes aren't printed.

42

fc957400.JaSE8Pri.SG.1.54

True or false: The first line of every constructor is a call to the parent constructor via the `super()` command.

False. A method may instead call `this()` as the first line of the constructor instead of `super()`, although it will eventually resolve to a constructor that calls `super()` as its first line.

43

fc957400.JaSE8Pri.SG.2.34

True or false: An instance method is allowed to reference a static variable.

True.

44

fc957400.JaSE8Pri.SG.2.05

What is the name of the method that guarantees the garbage collector will run?

Trick question! `System.gc()` suggests that the garbage collector run but does not guarantee it.

45

fc957400.JaSE8Pri.SG.1.44

When following JavaBean naming conventions, what would be the accessor method for the property `String s`;

```
public String getS() { return s; }
```

46

fc957400.JaSE8Pri.SG.2.17

A _____ statement within a loop transfers flow of control to the loop continuation point of the loop.

Continue

47

fc957400.JaSE8Pri.SG.1.46

How do you call this method from another class?

```
public class StaticMethod { public static void callMe() { } }
```

```
StaticMethod.callMe();
```

48

fc957400.JaSE8Pri.SG.1.57

Is a class that extends `RuntimeException` a checked or unchecked exception?

Unchecked

49

fc957400.JaSE8Pri.SG.2.44

What interface does Java provide for working with lambdas that declares a single method that returns a boolean?

Predicate

50

fc957400.JaSE8Pri.SG.2.35

True or false: A static method is allowed to reference an instance variable.

False (except through a reference to a class instance)

51

fc957400.JaSE8Pri.SG.1.51

What modifier(s) do all variables of an interface implicitly have?

public, static, final

52

fc957400.JaSE8Pri.SG.1.21

Which are thread-safe: String, StringBuilder, StringBuffer, arrays, or ArrayList?

String is thread-safe because it is immutable and StringBuffer is also thread-safe.

53

fc957400.JaSE8Pri.SG.2.47

What type would be used for a method parameter if it needed to be able to support any variable?

java.lang.Object

54

fc957400.JaSE8Pri.SG.2.37

True or false: Overloaded methods have the same method signatures.

False. The parameter lists must be different.

55

fc957400.JaSE8Pri.SG.1.01

What are the eight primitive types in Java?

byte, short, int, long, float, double, char, and boolean

56

fc957400.JaSE8Pri.SG.1.39

What code can call private methods?

Code in the same class.

57

fc957400.JaSE8Pri.SG.1.33

Write a line of code to print both the first and last index of this array:
`boolean[] b = {true, false};`

`System.out.println(b[0] + " " + b[b.length - 1]);` or
`System.out.println(b[0] + " " + b[1]);`

58

fc957400.JaSE8Pri.SG.2.06

True or false: The `finalize` method of an `Object` may be invoked multiple times.

False. The `finalize` method can be invoked at most once.

59

fc957400.JaSE8Pri.SG.2.45

Which characters in this statement are optional? (a) `a -> { return true; }`

The parentheses, `return` statement, and semicolon. It could have been `a->true`.

60

fc957400.JaSE8Pri.SG.2.49

Why can an abstract method not be marked `final`?

By abstract, the method cannot be instantiated directly and must be implemented by a subclass. By marking the method `final`, no subclass can implement it. Therefore, no concrete subclass could be created that includes the method.

61

fc957400.JaSE8Pri.SG.2.58

If the try block, catch block, and finally block all throw an exception, which gets thrown to the caller?	The one from the finally block
---	--------------------------------

62

fc957400.JaSE8Pri.SG.2.16

A _____ statement transfers flow of control out of an enclosing statement.	Break
--	-------

63

fc957400.JaSE8Pri.SG.2.27

What is the process called when Java automatically converts an int to an Integer?	Autoboxing
---	------------

64

fc957400.JaSE8Pri.SG.1.60

A try statement is allowed to have how many finally blocks?	Zero or one
---	-------------

65

fc957400.JaSE8Pri.SG.1.12

Where in a switch statement does the default block need to go?	The default block can appear anywhere in the switch statement, including the beginning, middle, and end.
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66

fc957400.JaSE8Pri.SG.2.41

True or false: When passing an ArrayList list to a method, calling list = new ArrayList() from the method affects the caller.	False. Parameters are passed by reference so reassignments do not affect the caller.
---	--

67

fc957400.JaSE8Pri.SG.1.18

What is `12 % 5 - 1`?

1

68

fc957400.JaSE8Pri.SG.1.49

True or false: A reference to a class may be automatically used as a reference to a subclass without an explicit cast.

False. A reference to a class may be automatically used as a reference to a superclass without an explicit cast.

69

fc957400.JaSE8Pri.SG.2.51

What is one reason default methods were added to interfaces in Java 8?

To improve backward compatibility. Interface developers can add a new method to an interface without requiring developers using the interface to recompile their code.

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fc957400.JaSE8Pri.SG.2.39

Which order does Java use when looking for matches in overloaded methods: autoboxing, exact match, widening primitives, varargs.

exact match, widening primitives, autoboxing, varargs.

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fc957400.JaSE8Pri.SG.2.61

True or false: If an interface has the method `void run() throws Exception`, the implementing class is allowed to have the method `public void run() throws IOException { }`.

True; more specific exceptions are allowed to be declared.

72

fc957400.JaSE8Pri.SG.1.58

True or false: A program should handle or declare `java.lang.Error`.

False. A program must handle or declare checked exceptions. It should not handle or declare `java.lang.Error`.

73

fc957400.JaSE8Pri.SG.2.56

If you have a constructor that calls another constructor in the same class, which should be used first, `this()` or `super()`?

Only `this()` would be used in the constructor. The second constructor would call the parent constructor itself.

74

fc957400.JaSE8Pri.SG.2.29

What are the three key local date and time classes and what do they represent?

`LocalDate` is just the date without time or time zone. `LocalTime` is just the time without date or time zone. `LocalDateTime` is the date and time without time zone.

75

fc957400.JaSE8Pri.SG.2.59

True or false: If a `try` statement has catch blocks for `IllegalArgumentException` and `RuntimeException`, the catch blocks can be in either order.

False. The more general catch blocks must appear below the more specific ones.

76

fc957400.JaSE8Pri.SG.2.28

What package are the new date/time classes in?

`java.time`

77

fc957400.JaSE8Pri.SG.1.62

If a `try` statement has both a catch block and a `finally` block, which order do they run in if an exception is thrown?

`try` followed by catch followed by `finally`

78

fc957400.JaSE8Pri.SG.1.45

When following JavaBean naming conventions, what would be the accessor method for the property `boolean b`?

```
public boolean isB() { return b; }
```

79

fc957400.JaSE8Pri.SG.1.25

Which of the following `StringBuilder` methods can be chained: `append`, `delete`, `insert`?

All three can be chained because they returned a `StringBuilder`.

80

fc957400.JaSE8Pri.SG.2.62

True or false: If an interface has the method `void run() throws IOException;`, the implementing class is allowed to have the method `public void run() throws Exception { }`.

False; broader exceptions are not allowed.

81

fc957400.JaSE8Pri.SG.1.30

_____ is used to reliably check if two `Strings` are the same.

`equals()`

82

fc957400.JaSE8Pri.SG.1.17

How do you negate a `boolean` value?

You cannot negate a `boolean` value, at least not numerically using the minus operator `-`. You can invert the `boolean` value using the logical complement operator `!`.

83

fc957400.JaSE8Pri.SG.2.40

True or false: When passing an `ArrayList` list to a method, calls to `list.add()` from the method are reflected in the caller.

True. The caller points to the same object as the method parameter.

84

fc957400.JaSE8Pri.SG.2.46

Which characters in this statement are optional? `() -> { System.out.println(); return true; }`

None. The parentheses are required when there aren't any parameters. The braces are required because there are multiple statements.

85

fc957400.JaSE8Pri.SG.2.55

True or false: If a parent class does not include a no-argument constructor, the child class cannot declare one.

False.

86

fc957400.JaSE8Pri.SG.2.24

What is the `<>` called in `List<Integer> a = new ArrayList<>();`?

The diamond operator.

87

fc957400.JaSE8Pri.SG.2.25

What method do you call on an `ArrayList` to insert an element after all current elements?

`add()`

88

fc957400.JaSE8Pri.SG.1.41

What code can read protected `String s`?

Code in the same package or code that subclasses the class containing that instance variable.

89

fc957400.JaSE8Pri.SG.1.13

As of Java 8, which data types are permitted as the decision variable for a switch statement?

byte, short, char, int, Enum, String, as well as Byte, Short, Character, and Integer

90

fc957400.JaSE8Pri.SG.1.03

Which of the following variables can `null` be assigned to? `String s;`
`Object o;` `int num;` `boolean b`

`String s` and `Object o` can be assigned `null` because they are objects. `int` and `boolean` are primitives and so cannot be assigned `null`.

91

fc957400.JaSE8Pri.SG.1.26

Which of the following `StringBuilder` methods can be chained: `reverse`, `substring`, `toString`?

Only `reverse` can be chained because it returns a `StringBuilder`. The other two return a `String`.

92

fc957400.JaSE8Pri.SG.2.48

What is the difference between overloading, overriding, and hiding a method?

Overloaded methods share the same name but different signatures and have no polymorphic relationship. Overridden methods share the same signature and are replaced at runtime in all places it is defined. Hidden methods share the same signature but are only replaced in the subclasses for which they are defined.

93

fc957400.JaSE8Pri.SG.2.13

True or false: `(5 <= 7) || (2 < 0)`

True

94

fc957400.JaSE8Pri.SG.1.47

True or false: An interface is a type of abstract class.

False. While an interface shares many properties of an abstract class, it is not actually an abstract class.

95

fc957400.JaSE8Pri.SG.1.56

True or false: For inherited methods of the parent class, both `super` and `this` can be used interchangeably within a child class to access the method, assuming the child class does not override it.

True

96

fc957400.JaSE8Pri.SG.2.12

Why should you be careful when evaluating the right-hand side of expressions that include `&&` and `||`?

The right-hand side of short-circuit operators will not be evaluated if the value can be determined solely from the left-hand side.

97

fc957400.JaSE8Pri.SG.1.11

<p>The bodies of which of the following statements will be executed at least once even if the boolean expression initially evaluates to false:</p> <p style="text-align: center;">while, do-while, for</p>	<p style="text-align: center;">do-while</p>
--	---

98
fc957400.JaSE8Pri.SG.1.16

<p>If you want the new value of an increment operator to be used in an expression after it is updated, which operator would you use?</p>	<p style="text-align: center;">The pre-increment operator, as in ++x</p>
--	--

99
fc957400.JaSE8Pri.SG.2.31

<p style="text-align: center;">How do you add an hour to a <code>LocalTime</code> object?</p>	<p style="text-align: center;"><code>LocalTime.plusHours(1);</code></p>
---	---

100
fc957400.JaSE8Pri.SG.2.09

<p>Order the following operators in decreasing order of precedence: <code> </code>, <code>==</code>, <code>*</code></p>	<p style="text-align: center;"><code>*== </code></p>
--	--

101
fc957400.JaSE8Pri.SG.1.34

<p>List the seven parts of a method declaration in order (including what exceptions are thrown).</p>	<p style="text-align: center;">access modifiers, optional specifiers, return type, method name, parameter list, exception clause, method body</p>
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102
fc957400.JaSE8Pri.SG.2.60

<p>True or false: If an interface has the method <code>void run() throws Exception;</code>, the implementing class is allowed to have the method <code>public void run() { }</code>.</p>	<p style="text-align: center;">True; fewer exceptions are allowed to be declared.</p>
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103
fc957400.JaSE8Pri.SG.1.42

In an encapsulated class, instance variables are of _____ scope
and getters/setters are of _____ scope.

private, public

104

fc957400.JaSE8Pri.SG.1.35

List all the access modifiers in Java.

public, private, protected, and default. The first three are keywords in Java. The last is specified with the lack of a keyword.

105

fc957400.JaSE8Pri.SG.2.22

What is returned by the following search? `int[] numbers = {2,4,6,8};`
`Arrays.binarySearch(numbers, 5)`

-3. The number isn't found but would be inserted at index 2 to preserve sort order. Remember that we negate that number and subtract 1 to get the answer.

106

fc957400.JaSE8Pri.SG.1.09

What packages are imported by default?

Only the package `java.lang` is imported by default. It contains many classes.

107

fc957400.JaSE8Pri.SG.2.30

How do you create an object with the current date and time?

`LocalDateTime.now();`

108

fc957400.JaSE8Pri.SG.2.33

What is the class used for formatting a date?

`DateTimeFormatter`

109

fc957400.JaSE8Pri.SG.2.64

Which of the following exceptions are checked exceptions? ArrayIndexOutOfBoundsException, ClassCastException, ExceptionInInitializerError, FileNotFoundException, IOException	FileNotFoundException and IOException
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110

fc957400.JaSE8Pri.SG.1.43

When following JavaBean naming conventions, what would be the mutator method for the property String s;?	public void setS(String s) { this.s = s; }
--	--

111

fc957400.JaSE8Pri.SG.2.43

How do you call one constructor from another in the same class?	this()
---	--------

112

fc957400.JaSE8Pri.SG.1.61

A regular try statement (not a try-with-resources) statement is allowed to have how many catch blocks?	Zero or more (zero if it has a finally block)
--	---

113

fc957400.JaSE8Pri.SG.1.14

Are curly brackets { } required in if-then statements?	No, they are optional if there is only one statement in the branch of the if statement.
--	---

114

fc957400.JaSE8Pri.SG.1.29

_____ is used when comparing variables to see if they point to the same object.	==
---	----

115

fc957400.JaSE8Pri.SG.1.28

Why is `StringBuilder` better than `StringBuffer`?

`StringBuilder` is faster because it doesn't need to be thread-safe.

116

fc957400.JaSE8Pri.SG.2.20

Write a line of code to print the number of elements passed into this method:
`public void method(double... d)`

```
System.out.println(d.length);
```

117

fc957400.JaSE8Pri.SG.2.03

An instance of a class is called a(n) _____.

Object

118

fc957400.JaSE8Pri.SG.2.42

True or false: A default constructor is always provided in a class

False. A default constructor is only provided if none are coded.

119

fc957400.JaSE8Pri.SG.2.18

What is the command line used to compile the Java class `Wolf.java` and what file does it generate?

Run: `javac Wolf.java` (and it generates `Wolf.class`)

120

fc957400.JaSE8Pri.SG.1.04

What characters can a variable name begin with?

A letter, dollar sign, or underscore

121

fc957400.JaSE8Pri.SG.1.02

What are the default values for these instance variables: String s; int num; boolean b; double d?	s = null; num = 0; b = false; d = 0.0
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122
fc957400.JaSE8PrI.SG.1.22

Which are final: String, StringBuilder, StringBuffer, arrays, or ArrayList?	String is the only class in that list that is final.
---	--

123
fc957400.JaSE8PrI.SG.2.10

How many default statements can a single switch statement have?	A switch statement may have at most one default statement.
---	--

124
fc957400.JaSE8PrI.SG.2.19

What is the command line to run the program contained in Wolf.class?	java Wolf
--	-----------

125
fc957400.JaSE8PrI.SG.1.23

What does this code print? String s = "hmm"; System.out.println(s.substring(1, 2));	m. The substring starts with the character at index 1 (m) and ends with the character before index 2.
---	---

126
fc957400.JaSE8PrI.SG.1.55

What is the difference between super() and super?	The super() command calls the constructor of the parent class and is used in the first line of every child constructor, whereas super is a keyword used to reference a member of the parent class.
---	--

127
fc957400.JaSE8PrI.SG.2.52

True or false: All methods in Java are virtual methods.

False. Only nonfinal, nonstatic, and nonprivate methods are virtual in Java.