Chapter 6

Section 6.2

6.2 Q1: Information is passed to a method in:
   a. the method name.
   b. that method's return.
   c. the called method.
   d. the arguments to the method.
ANS: d. the arguments to the method.

6.2 Q2: Programs designed for maintainability are constructed from small simple pieces or modules. Modules in Java are called:
   a. methods.
   b. classes.
   c. arguments.
   d. both methods and classes.
ANS: d. both methods and classes

6.2 Q3: A well-designed method
   a. performs multiple unrelated tasks.
   b. repeats code found in other methods.
   c. contains thousands of lines of code.
   d. performs a single, well-defined task.
ANS: d. performs a single, well-defined task.

Section 6.3

6.3 Q1: Which of the following methods is not in the Math class?
   a. ceil
   b. abs
   c. parseInt
   d. log
ANS: c. parseInt is in the Integer class.

6.3 Q2: Which of the following can be an argument in a method?
   a. Constants.
   b. Variables.
   c. Expressions.
   d. All of the above.
ANS: d. All of the above.

6.3 Q3: Method log takes the logarithm of its argument with respect to what base?
   a. 10
   b. e
   c. 2
   d. pi
ANS: b. e

Section 6.4

6.4 Q1: Swing GUI components typically are attached to
   a. JApplet.
   b. a content pane.
   c. an init method.
   d. JTextArea.
ANS: b. a content pane.

6.4 Q2: Variables should be declared as fields if
   a. they are local variables.
b. they are used only within a method.
c. their values must be saved between calls to the method.
d. they are arguments.
ANS: c. their values must be saved between calls to the method.

6.4 Q3: Consider the following Java statements:
```java
int x = 9;
double y = 5.3;
result = calculateValue( x, y );
```
Which of the following statements is true?
A. A method is called with its name and parentheses.
B. x and y are parameters.
C. Copies of x and y are passed to the method calculateValue().
D. x and y are arguments.
a. None of the statements are true.
b. B and D are true.
c. B is false.
d. All of the statements are true.
ANS: c. B is false. x and y are arguments. Parameters specified in a method’s declaration. They indicate the types of the arguments passed to the method when it is called.

6.4 Q4: The parameter list in the method header and the method call arguments must agree in:
a. number
b. type
c. order
d. all of the above
ANS: d. all of the above

Section 6.5

6.5 Q1: Which of the following promotions of primitive types is NOT allowed to occur?
   a. char to int.
   b. int to double.
   c. short to long.
   d. double to float.
ANS: d. double to float.

6.5 Q2: Which of the following primitive types is never promoted to another type?
   a. double.
   b. byte.
   c. boolean.
   d. Both a and c.
ANS: d. Both a and c.

Section 6.6

6.6 Q1: Which statement is not true.
   a. The Java API consists of packages.
   b. The Java API is provided to keep programmers from "reinventing the wheel."
   c. The Java API consists of import declarations.
   d. The class javax.swing.JApplet is part of the Java API.
ANS: c. The Java API consists of import declarations. (The Java API is built from packages.)

6.6 Q2: Which of the following is not a package in the Java API?
   a. java.component.
   b. java.awt.
   c. javax.swing.event.
   d. java.lang.
ANS: a. java.component.

6.6 Q3: The java.text package contains classes for manipulating all of the following items except
  a. classes
  b. numbers
  c. strings
  d. characters
ANS: a. classes

Section 6.7

6.7 Q1: Which statement below could be used to simulate the outputs of tossing a quarter to get heads or tails?
  a. 1 + (int) (Math.random() * 6);
  b. 1 + (int) (Math.random() * 2);
  c. 6 + (int) (Math.random() * 1);
  d. 1 + (int) (Math.random() * 25);
ANS: b. 1 + (int) (Math.random() * 2);

6.7 Q2: The purpose of (int) in the statement
  1 + (int) (Math.random() * 6);
  a. is to create an element of chance.
  b. is to be a scaling factor.
  c. is to shift the output value.
  d. is to truncate the floating-point part of the product.
ANS: d. is to truncate the floating-point part of the product.

6.7 Q3: Method random generates a random double value in the range from 0.0
  a. up to but not including 1.0
  b. up to and including 1.0
  c. up to and including 100.0
  d. up to but not including 100.0
ANS: a. up to but not including 1.0

Section 6.8

6.8 Q1: An applet’s content pane may be assigned a layout manager to:
  a. Handle events.
  b. Arrange GUI components.
  c. Implement interfaces.
  d. Create GUI components.
ANS: b. Arrange GUI components.

6.8 Q2: A JButton can cause an event (i.e., a call to an event-handling method) if:
  a. An event handler has been called.
  b. The registered event handler implements the ActionListener interface.
  c. The registered event handler extends the GUI.
  d. The JButton has been added to JApplet.
ANS: b. The registered event handler implements the ActionListener interface.

6.8 Q3: What keyword declares that a variable is a constant?
  a. constant
  b. static
  c. private
  d. final
ANS: d. final

Section 6.9
6.9 Q1: Identifiers in Java have _______ and _______ scopes?
   a. method, class.
   b. class, block.
   c. block, statement.
   d. statement, file.
   ANS: b. class, block.

6.9 Q2: Which of the following statements describes block scope?
   a. It begins at the opening { of the class declaration and terminates at the closing }.
   b. It limits label scope to only the method in which it is declared.
   c. It begins at the identifier’s declaration and ends at the terminating right brace (}).
   d. It is valid for one statement only.
   ANS: c. It begins at the identifier’s declaration and ends at the terminating right brace (}).

6.9 Q3: Which of these statements best defines scope?
   a. Scope refers to the classes that have access to a variable.
   b. Scope determines whether a variable’s value can be altered.
   c. Scoping allows the programmer to use a class without using its fully qualified name.
   d. Scope is the portion of a program that can refer to an entity by name.
   ANS: d. Scope is the portion of a program that can refer to an entity by name.

Section 6.10

6.10 Q1: The key methods of the class JApplet are:
   a. init, start, paint, stop, destroy, quit.
   b. init, start, paint, stop, destroy, restart.
   c. init, start, paint, stop, destroy.
   d. init, start, repaint, stop, destroy.
   ANS: c. init, start, paint, stop, destroy.

6.10 Q2: The repaint method is necessary because:
   a. paint can only be called once.
   b. repaint provides context (i.e. a Graphics argument) to paint.
   c. paint can only be called from init.
   d. None of the above.
   ANS: b. repaint provides context (i.e. a Graphics argument) to paint.

6.10 Q3: Redefining one of the JApplet methods is also known as
   a. overriding.
   b. overloading
   c. hiding
   d. initializing
   ANS: a. overriding

Section 6.11

6.11 Q1: In a class containing methods with the same name, the methods are distinguished by:
   a. Number of arguments.
   b. Types of arguments.
   c. Return type.
   d. A and B.
   e. B and C.
   ANS: d.

6.11 Q2: A Java class can have which of the following methods?
   A. foo( int a )
   B. foo( int a, int b )
C. foo( double a )
D. foo( double a, double b )
E. foo( int b )
   a. All of the above.
   b. A, B, D, E.
   c. A, B, C, D.
   d. A, C, D, E.

ANS: c. A, B, C, D.

6.11 Q3: An overloaded method is one that
   a. has a different name as another method, but the same arguments.
   b. has the same name as another method, but different arguments.
   c. has the same name and arguments as a method defined in another class.
   d. has the same name and arguments, but a different return type as another method.

ANS: b. has the same name as another method, but different arguments.

Section 6.12

6.12 Q1: A recursive method _____.
   a. calls itself directly or indirectly.
   b. has a base case
   c. has a recursive call (or recursion step)
   d. All of the above.

ANS: d. All of the above.

6.12 Q2: The Java primitive type that holds numbers with the largest absolute value is:
   a. double.
   b. float.
   c. long.
   d. int.

ANS: a. double.

6.12 Q3: Which of the following statements about recursion are true.
   a. Recursion uses repetition by having a method call itself.
   b. Recursion uses a termination test.
   c. Recursion can occur infinitely.
   d. All of the above.
   e. None of the above.

ANS: d. All of the above.

6.12 Q4: The recursion step should
   a. check for the base case.
   b. call a fresh copy of the recursive method to work on a smaller problem.
   c. make two calls to the recursive method.
   d. iterate until it reaches a termination condition.

ANS: b. call a fresh copy of the recursive method to work on a smaller problem.

Section 6.13

6.13 Q1: The number of calls to the fibonacci method to calculate fibonacci(7) is:
   a. 7
   b. 13
   c. 41
   d. 39

ANS: c. 41
6.13 Q2: Operands in Java are evaluated
   a.right to left.
   b.left to right.
   c.at the same time.
   d.determined at runtime.
ANS: b. left to right.

Section 6.14

6.14 Q1: Recursion is often less efficient than iteration because
   a.it can cause an explosion of method calls.
   b.it is not as intuitive.
   c.recursive methods are harder to debug.
   d.recursive methods take longer to program.
ANS: a. it can cause an explosion of method calls.

6.14 Q2: All of the following are true for both recursion and iteration except
   a.they have a base case.
   b.they can cause infinite loops.
   c.they are based on a control statement.
   d.both gradually approach termination.
ANS: a. they have a base case.

6.14 Q3: Recursion often is preferable over iteration because
   a.it is faster.
   b.it requires less memory.
   c.it models the program more logically.
   d.all of the above.
ANS: c. it models the program more logically.