2.7

a)_____ are used to document a program and improve its readability.
b) A decision can be made in a Java program with a(n) _____.
c) Calculations are normally performed by _____ statements.
d) The arithmetic operators with the same precedence as multiplication are and_____.
e) When parentheses in an arithmetic expression are nested, the _____set of parentheses is evaluated first.
f) A location in the computer's memory that may contain different values at various times throughout the execution of a program is called a(n) _____ .

Answer:
a) Comments
b) If statement
c) Assignment
d) Division, Modulo
e) Innermost
f) Variable

2.8

Write Java statements that accomplish each of the following tasks:
a) Display the message "Enter an integer: ", leaving the cursor on the same line.
b) Assign the product of variables b and c to variable a.
c) Use a comment to state that a program performs a sample payroll calculation.

Answer:
a)
```
System.out.print("Enter an integer: ");
```
b)
```
int a = b*c;
```
c)
```
// a program performs a sample payroll calculation
```

2.9

State whether each of the following is true or false. If
false, explain why.
a) Java operators are evaluated from left to right.
b) The following are all valid variable names: _under_bar_,
m928134, t5, j7, her_sales$,
his_$account_total, a, b$, c, z and z2.
c) A valid Java arithmetic expression with no parentheses is
evaluated from left to right.
d) The following are all invalid variable names: 3g, 87, 67h2,
h22 and 2h.

Answer:
a) False— True for all other operators except for
assignment operators, which are evaluated right to left
b) True
c) False— Java operators are evaluated in order of
their precedence.
d) True

2.10

Assuming that x = 2 and y = 3, what does each of the following
statements display?
a) out.printf("x = %d%n", x);
b) out.printf("Value of %d + %d is %d%n", x, x, (x + x));
c) out.printf("x =");
d) out.printf("%d = %d%n", (x + y), (y + x));

Answer:
a) x = 2
b) Value of 2 + 2 is 4
c) x =
d) 5 = 5

2.11

Which of the following Java statements contain variables whose
values are modified?
a) p = i + j + k + 7;
b) out.println("variables whose values are modified");
c) out.println("a = 5");
d) value = input.nextInt();

Answer: a, b, d

2.12

Given that y = ax3 + 7, which of the following are correct
Java statements for this equation?

a) y = a * x * x * x + 7;
b) y = a * x * x * (x + 7);
c) y = (a * x) * x * (x + 7);
d) y = (a * x) * x * x + 7;
e) y = a * (x * x * x) + 7;
f) y = a * x * (x * x + 7);

Answer: a, e

2.13

State the order of evaluation of the operators in each of the
following Java statements, and
show the value of x after each statement is performed:

a) x = 7 + 3 * 6 / 2 - 1;
b) x = 2 % 2 + 2 * 2 - 2 / 2;
c) x = (3 * 9 * (3 + (9 * 3 / (3))));

Answer:
a) 15, Order: * / + -
b) 3, Order: * / % + -
c) 324, Order: Inner-outermost parentheses, *,/ +, *

2.25

Write an application that reads an integer and determines and
prints whether
it's odd or even. [Hint: Use the remainder operator. An even
number is a multiple of 2. Any multiple
of 2 leaves a remainder of 0 when divided by 2.]

Answer:
See attachment (EvenOdd.java)