Chapter 2 Self-Review Exercises – Answers

2.1 Fill in the blanks

a) Opening brace {, Closing brace }  
b) if  
c) //  
d) Space, tab, newline  
e) Keywords (reserved words)  
f) main  
g) System.out.print, System.out.println, System.out.printf

2.2 True/False

a) False – Comments are ignored by the computer.  
b) True – Java requires all variables to have a type.  
c) False – Java is case-sensitive, so number and NuMbEr are different variables.  
d) False – % can be used with both integers and floating-point numbers.  
e) False – \*, /, and % have higher precedence than + and -.

2.3 Write Statements

// a) Declare variables

int c, thisIsAVariable, q76354, number;

// b) Prompt user

System.out.print("Enter an integer: ");

// c) Input an integer

int value = input.nextInt();

// d) Print one-line output

System.out.println("This is a Java program");

// e) Print multi-line output

System.out.printf("This is a Java%nprogram%n");

// f) If number is not 7, display a message

if (number != 7) {

System.out.println("The variable number is not equal to 7");

}

2.4 Identify and Correct Errors

a)

if (c < 7) {

System.out.println("c is less than 7");

}

b)

if (c >= 7) {

System.out.println("c is equal to or greater than 7");

}

2.5 Write Statements

// a) State the program's purpose

// This program calculates the product of three integers

// b) Create Scanner object

Scanner input = new Scanner(System.in);

// c) Declare variables

int x, y, z, result;

// d) Prompt user for integers

System.out.print("Enter first integer: ");

x = input.nextInt();

System.out.print("Enter second integer: ");

y = input.nextInt();

System.out.print("Enter third integer: ");

z = input.nextInt();

// e) Compute product

result = x \* y \* z;

// f) Display result

System.out.printf("Product is %d%n", result);

2.6 Complete Program

import java.util.Scanner;

public class ProductCalculator {

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

System.out.print("Enter first integer: ");

int x = input.nextInt();

System.out.print("Enter second integer: ");

int y = input.nextInt();

System.out.print("Enter third integer: ");

int z = input.nextInt();

int result = x \* y \* z;

System.out.printf("Product is %d%n", result);

}

}

2.7 Fill in the blanks

a) Comments  
b) if statement  
c) Assignment statements  
d) Division / and Modulus %  
e) Innermost parentheses  
f) Variable

2.8 Write Statements

// a) Display message on same line

System.out.print("Enter an integer: ");

// b) Assign product of b and c to a

a = b \* c;

// c) Comment for payroll program

// This program performs a sample payroll calculation

2.9 True/False

a) False – Operators follow precedence, not just left-to-right.  
b) True – These are valid variable names.  
c) False – Operator precedence matters, not left-to-right order.  
d) True – Variable names cannot start with a number.

2.10 What does it print?

Given x = 2, y = 3:

System.out.printf("x = %d%n", x); // x = 2

System.out.printf("Value of %d + %d is %d%n", x, x, (x + x)); // Value of 2 + 2 is 4

System.out.printf("x ="); // x =

System.out.printf("%d = %d%n", (x + y), (y + x)); // 5 = 5

2.11 Which modify variables?

p = i + j + k + 7; // Modifies p

value = input.nextInt(); // Modifies value

2.12 Correct Java expressions for y = ax³ + 7

y = a \* x \* x \* x + 7; // Correct