Chapter 2 Java answers

Section2.1

1. Opening and closing braces
2. If-else
3. Two forward slashes
4. Spaces, tabs and newlines
5. Keywords
6. Main
7. Print and printing

Section2.2

a. False:comments are ignored by the compiler/ interpreter during program execution
b. True:in Java, all variables must be explicitly declared by a data type
c. False:Java is case-sensitive
d. False: the remainder operator can be used with both integer and floating-points
e. False: the arithmetic operators have different levels of precedence

Section 2.7

a. Comments
b. If-else statements
c. Arithmetic statements
d. Division and module
e. The innermost
f. A variable

Section 2.9

a. False: Java operators are evaluated based on their operator precedence and associativity
b. False
c. False: it's evaluated according to operator precedence
d. True: they are invalid because they start with a digit

Section 2.10

a. It prints 2
b. The value of 2+2 is 4
c. Prints x=
d. The first argument (y+x), which equates to 3+2=5 will be printed

Section 2.11

a. Yes the assignment operator assigns the result of the right side to the variable p. Modifying its value
b. No this is a print statement
c. No this is a print statement, it prints the literal string"a=5"
d. Yes the assignment operator assigns the integer read from the input stream to the variable value

Section 2.12

aa)y=a*x*x*x+7;:Correct

ab)y=a*x*x*(x+7);:Incorrect

âc) y = (a * x) * x * (x + 7);: Incorrect

âd) y = (a * x) * x * x + 7;: e) y = a * (x * x * x) + 7;: Correct

e) y = a * (x * x * x) + 7;: Correct

âf) y = a * x * (x * x + 7);: Incorrect

Section 2.13

a) X=7+3*6 / 2-1;
b) â□□Multiplication: 3 * 6 = 18. Expression becomes: x = 7 + 18 / 2 - 1.
c) â□□Division: 18 / 2 = 9. Expression becomes: x = 7 + 9 - 1.
d) â□□Addition (Left to Right): 7 + 9 = 16. Expression becomes: x = 16 - 1.
e) â□□Subtraction: 16 - 1 = 15.
f) â□□Order of evaluation steps: Multiplication \to Division \to Addition \to Subtraction.
g) â□□Value of x: 15
h) â□□b) x = 2 % 2 + 2 * 2 - 2 / 2;
i) âModulo (%): 2 \% 2 = 0. Expression becomes: x = 0 + 2 * 2 - 2 / 2.
j) âMultiplication: 2 * 2 = 4. Expression becomes: x = 0 + 4 - 2 / 2.
k) âDivision: 2 / 2 = 1. Expression becomes: x = 0 + 4 - 1.
l) âAddition (Left to Right): 0 + 4 = 4. Expression becomes: x = 4 - 1.
m) âSubtraction: 4 - 1 = 3.
n) âOrder of evaluation steps: Modulo \to Multiplication \to Division \to Addition \to Subtraction.
o) âValue of x: 3
p) âc) x = (3 * 9 * (3 + (9 * 3 / 3)));

q) This involves nested parentheses, so we evaluate the innermost first.
r) âInnermost Parentheses (Multiplication/Division Left to Right):
s) â9 * 3 = 27. Expression inside parentheses becomes: (3 + (27 / 3)).
t) â27 / 3 = 9. Expression inside parentheses becomes: (3 + 9).
u) âInnermost Parentheses (Addition): 3 + 9 = 12. Expression becomes: x = (3 * 9 * 12).
v) âOuter Parentheses (Multiplication Left to Right):
w) â3 * 9 = 27. Expression becomes: x = (27 * 12).
x) âFinal Multiplication: 27 * 12 = 324.
y) âOrder of evaluation steps: Innermost: (9*3) \to (27/3) \to (3+9). Then Outer: (3*9) \to (27*12).
z) âValue of x: 324