

## Expressions

For exercises 1 to 14, indicate the order in which the expressions will be evaluated by putting sequence numbers (1, 2, etc.) below each operator in the expression. Refer to Appendix D in your textbook as needed regarding Java operator precedence.

- |                       |                              |
|-----------------------|------------------------------|
| 1. $a - b - c - d$    | 8. $a - (b - c) - d$         |
| 2. $a - b + c - d$    | 9. $(a - (b - c)) - d$       |
| 3. $a + b / c / d$    | 10. $a - ((b - c) - d)$      |
| 4. $a + b / c * d$    | 11. $a \% (b \% c) * d * e$  |
| 5. $a / b * c * d$    | 12. $a + (b - c) * d - e$    |
| 6. $a \% b / c * d$   | 13. $(a + b) * c + d * e$    |
| 7. $a \% b \% c \% d$ | 14. $(a + b) * (c / d) \% e$ |

For exercises 15 to 57, consider the declarations below, then indicate the value that is assigned in each assignment statement. That is, show what is stored in the `iResult`, `fResult`, or `sResult` variables after each assignment. Show each floating point value to three places past the decimal point. Refer to Appendix M in your textbook as needed regarding specific methods.

```
int iResult, num1 = 25, num2 = 40, num3 = 17, num4 = 5;
int num5 = -14, num6 = -27;
double fResult, val1 = 17.0, val2 = 12.78;
String sResult, title = "Java Software Solutions";
```

15.    `iResult = num1 / num4;`
16.    `fResult = num1 / num4;`
17.    `iResult = num3 / num4;`
18.    `fResult = num3 / num4;`

19. `fResult = val1 / num4;`
20. `fResult = val1 / val2;`
21. `iResult = num1 / num2;`
22. `fResult = num1 / num2;`
23. `fResult = (double) num1 / num2;`
24. `fResult = num1 / (double) num2;`
25. `fResult = (double) (num1 / num2);`
26. `iResult = (int) (val1 / num4);`
27. `fResult = (int) (val1 / num4);`
28. `fResult = (int) ((double) num1 / num2);`
29. `iResult = num3 % num4;`
30. `iResult = num2 % num3;`
31. `iResult = num3 % num2;`
32. `iResult = num2 % num4;`
33. `iResult = num5 % num4;`
34. `iResult = num6 % num5;`
35. `iResult = title.length();`
36. `fResult = title.length();`
37. `iResult = title.indexOf('t');`
38. `iResult = title.indexOf('q');`
39. `iResult = title.lastIndexOf('a');`
40. `sResult = title.toUpperCase();`
41. `sResult = title.replace('o', 'X');`
42. `sResult = title.substring(8);`

```
43.  sResult = title.substring(8, 16);
44.  iResult = (title.substring(8, 16)).length();
45.  sResult = title + num1;
46.  sResult = title + num1 + num2;
47.  sResult = title + (num1 + num2);
48.  iResult = Math.abs(num6);
49.  iResult = Math.abs(num1 - num2);
50.  fResult = Math.sqrt(num2);
51.  fResult = Math.pow(num4, 3);
52.  iResult = Math.max(num2, num3);
53.  iResult = Math.floor(val2);
54.  iResult = Math.ceil(val2);
55.  fResult = Math.sin(num2 + num1 * 2);
56.  fResult = Math.PI * num4;
57.  fResult = Math.pow(title.length(), 2) + num3 *
        Math.sqrt(num3 / num4);
```