

SOL 7.13b—Replacement Values/ Order of Operations

Use the following words to fill in the blanks for questions 1 – 5.

| | | | | |
|-------------|----------|-----------|------|----------|
| Coefficient | Constant | Algebraic | Term | Variable |
|-------------|----------|-----------|------|----------|

1. When plus or minus sign separate an algebraic expression into parts, each part is called a _____.
2. The number multiplied with a variable (number factor) in an algebraic term is called a _____.
3. A quantity that can change or may take on different values, often represented by a letter or symbol is called a _____.
4. A term in a simplified algebraic expression or equation that does not contain a variable is called a _____.
5. The word, _____, is used to refer to an expression, equation, or inequality that includes variable terms.

Evaluate each expression using the replacement values given. Show all work in the space provided. Circle answers.

6) $n^2 - m$, if $n = 8$ and $m = 7$

7) $8(x - y)$, if $x = (-5)$ and $y = 2$

8) $10 - x + y \div 2$, if $x = 5$ and $y = (-12)$

9) $x(y \div 3)^2$, if $x = (-4)$ and $y = (-15)$

10) $j(h - 9)^3 + 2$, if $h = 11$ and $j = 8$

11) $y[(9 - 4y) - x]$, if $x = 4$ and $y = 2$

12) $(n + 2)^2 \div 3$, if $n = 7$

13) $n + (k + 5m)$, if $k = 2$, $m = 7$, and $n = (-4)$

14) $6x - (z - 2y)^2 + 15$, if $x = 7$, $y = 3$, and $z = 9$

15) $10 - \frac{xz}{3}$, if $x = 7$ and $z = 9$

16) $(9 - 3y) + 4z - 5$, if $y = 4$ and $z = 9$

17) $\frac{10mn}{3p-3}$, if $m = 6$, $n = 3$ and $p = 7$

Complete the charts below. Show all work in the space below.

18.

| Quarts (q) | Gallons ($\frac{q}{4}$) |
|----------------|---------------------------|
| 4 | |
| 6 | |
| 8 | |
| 10 | |
| 12 | 3 |
| 14 | |



19.

| Dollars (d) | Quarters ($4d$) |
|-----------------|-------------------|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | 20 |
| 6 | |



20. Charlie earns \$16 per game for umpiring Little League baseball games. Complete the table below that shows how much money Charlie will earn for umpiring 1, 3, 7, 12 and 15 baseball games. Show all work.

| Number of Games | Amount Earned |
|-----------------|---------------|
| | |
| | |
| | |
| | |
| | |



21. Evaluate each expression for the given value. Show all work.

| Algebraic Expression | $m = \frac{1}{2}$ | $m = (-2)$ | $m = 4$ |
|----------------------|-------------------|------------|---------|
| m^2 | | | |
| $12 - 3m$ | | | |
| $m^2 \div 2$ | | | |

For questions 22-30, identify the circled portion for each using the correct letter from the words below.

A. term B. coefficient C. expression D. constant E. variable

22. $(3)x + y$ _____
23. $6x^2 + 3x - (18)$ _____
24. $(13 + 4x^3 + x) = 10$ _____
25. $3h^2 - (7h) + 26$ _____
26. $14(g) + 27 = 55$ _____
27. $16 = (6)m - 8$ _____
28. $-7k^2 + 8k - (27)$ _____
29. $33 = (4u - 3)$ _____
30. $6p^3 + (7q^2) + 8r = 124$ _____

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Answer Key

1. Term
2. Coefficient
3. Variable
4. Constant
5. Algebraic
6. 57
7. (-56)
8. (-1)
9. (-100)
10. 66
11. (-6)
12. 27
13. 33
14. 48
15. (-11)
16. 28
17. 10
- 18.

19.

| Quarts (q) | Gallons (q/4) |
|------------|---------------|
| 4 | 1 |
| 6 | 1.5 |
| 8 | 2 |
| 10 | 2.5 |
| 12 | 3 |
| 14 | 3.5 |

| Dollars (d) | Quarters (4d) |
|-------------|---------------|
| 1 | 4 |
| 2 | 8 |
| 3 | 12 |
| 4 | 16 |
| 5 | 20 |
| 6 | 24 |

20.

| Number of Games | Amount Earned (\$) $16g$ |
|-----------------|-----------------------------|
| 1 | 16 |
| 3 | 48 |
| 7 | 112 |
| 12 | 192 |
| 15 | 240 |

21.

| Expression | $m = \frac{1}{2}$ | $m = (-2)$ | $m = 4$ |
|--------------|-------------------|------------|---------|
| m^2 | $\frac{1}{4}$ | 4 | 16 |
| $12 - 3m$ | $10\frac{1}{2}$ | 18 | 0 |
| $m^2 \div 2$ | $\frac{1}{8}$ | 2 | 8 |

22. B
23. D
24. C
25. A
26. E
27. B
28. D
29. C
30. A