



Objective: REVIEW

Write Expressions and Evaluate Expressions

An expression is a mathematical phrase with numbers, operation signs, and variables. You can write an expression to describe a real-world situation. For example, the numerical expression $6 \div 3$ could describe placing 6 students into 3 equal groups.

You can evaluate an expression with a variable by substituting a number for the variable. If an expression contains more than one operation, you need to know in which order to perform the operations. The order of operations is a set of rules that determines the correct sequence for evaluating expressions.

Order of Operations

1. Evaluate expressions in parentheses.
2. Evaluate exponents.
3. Multiply and divide in order from left to right.
4. Add and subtract in order from left to right.



- Which expression represents “the product of a number g and 8”?
 - $g + 8$
 - $g - 8$
 - $8g$
 - $8 \div g$
- Which expression represents “half the sum of 5 and a number b ”?
 - $\frac{b + 5}{2}$
 - $2b + 5$
 - $\frac{b}{2 + 5}$
 - $\frac{b}{2} + 5$
- Bianca puts \$10 in a savings account each month and an extra \$20 when she receives money for her birthday. If her birthday was this week, which expression represents the amount she has saved this year?
 - $20m + 10$
 - $20m - 10$
 - $10m - 20$
 - $10m + 20$
- Marion is 3 years more than 5 times as old as Paula. If p represents Paula’s age, which expression represents Marion’s age?
 - $3p + 5$
 - $3p - 5$
 - $5p + 3$
 - $5p - 3$
- Which expression represents “add 7 and a number n , then multiply by 8 cubed”?
 - $8^3 \times (7 + n)$
 - $8^3 + 7n$
 - $8^3 + 7 + n$
 - $8^3 \times 7n$
- Oscar bought n ride tickets at the carnival. Esther bought 4 times as many ride tickets as Oscar. Which expression represents the total number of ride tickets that Oscar and Esther bought?
 - $4n + 4n$
 - $n + 4n$
 - $n + 4$
 - $4n$

7. Which expression represents “9 less than the product of 5 and a number n ”?

- A. $9 - (5 + n)$
- B. $9 - 5n$
- C. $(5 + n) - 9$
- D. $5n - 9$

8. Which expression represents “the sum of 16 squared and the quotient of 8 and a number b ”?

- A. $16^2 + \frac{8}{b}$
- B. $16^2 + 8b$
- C. $(16 + 8)^2 \div b$
- D. $(16 + 8 \div b)^2$

9. Use “the product of 6 and the sum of 3 times a number n and 5” to answer the questions below.

A. Write an expression that represents the statement.

B. Explain how you decided what operation symbols to use in your expression.

10. Select True or False for each statement about the representation of the expression “10 less than the product of 3 and a number n .”

- A. 3 is a factor. True False
- B. 10 is a factor. True False
- C. $3n$ is a term. True False
- D. 10 is a coefficient. True False

11. Use terms from the box to make this a true statement.

In the expression “the quotient of the sum of a number b and 3 divided by 3,” _____ is the dividend and _____ is the divisor.

| |
|---------|
| 3 |
| b |
| $b - 3$ |
| $b + 3$ |

12. Circle every statement that is true.

- A. $(xy)^3$ represents “the cube of the product of a number x and a number y .”
- B. $(n + 4)^2$ represents “the sum of the square of a number and 4.”
- C. $2^2 \times (5 + n)$ represents “add 5 and a number n ; then multiply by 2 squared.”
- D. $n^3 - 3^2$ represents “subtract the cube of a number n from 3 squared.”
- E. $(n - 2)^3$ represents “the cube of the difference of n and 2.”

13. Select True or False for each statement about the representation of the expression “the sum of 6 and 5 times a number n .”

- A. 6 is a factor. True False
- B. 5 is a factor. True False
- C. 6 is an addend. True False
- D. 5 is a coefficient. True False
- E. 6 is a term. True False
- F. $5n$ is a term. True False

14. Is each expression a product of two factors? Select Yes or No.

- A. $n + 4$ Yes No
- B. $4n$ Yes No
- C. $3 \times 4n$ Yes No
- D. 2×3 Yes No
- E. 2^2 Yes No



1. What is the value of the expression below?

$$20 + 8 - 4^2$$

- A. 12
- B. 24
- C. 28
- D. 44

2. What is the value of the expression below?

$$6 \div 2 - 1$$

- A. 6
- B. 5
- C. 3
- D. 2

3. What is the value of the expression below when $a = 2$ and $b = 4$?

$$3a + b$$

- A. 9
- B. 10
- C. 18
- D. 24

4. What is the value of the expression below when $k = 4$?

$$18 - k^2$$

- A. 2
- B. 8
- C. 16
- D. 128

5. What is the value of the expression below when $m = 9$ and $n = 3$?

$$m^2 \div (n + 6)$$

- A. 84
- B. 33
- C. 15
- D. 9

6. What is the value of the expression below when $x = 6$ and $y = 2$?

$$xy - y^3$$

- A. 4
- B. 15
- C. 54
- D. 1,000

7. What is the area of a square with a side length of 11 inches? Use the formula $A = s^2$, where s is the side length of the square.

- A. 22 square inches
- B. 44 square inches
- C. 121 square inches
- D. 1,331 square inches

8. What is the volume of a cube with a side length of 17 centimeters? Use the formula $V = s^3$, where s is the side length of the cube.

- A. 20 cubic centimeters
- B. 51 cubic centimeters
- C. 289 cubic centimeters
- D. 4,913 cubic centimeters

9. Use the expression $(8g - 4b) \div b^2$ to answer the questions below.

A. What is the value of the expression when $g = 6$, and $b = 3$?

B. Explain how you used the order of operations to find the value of the expression.

10. Select True or False for each statement.

A. $4^2 + 3 = 19$ True False

B. $\frac{15}{5} - 1 + 8 = 10$ True False

C. $3(2 + 4) = 10$ True False

D. $4 \times 5 + 2 = 28$ True False

E. $3 + 7 \times 2 = 17$ True False

11. Circle the number that makes each statement true.

$$10 \div 5 + 4 = \begin{array}{|c|} \hline \frac{1}{9} \\ \hline 6 \\ \hline 54 \\ \hline \end{array}$$

$$10 \times 5 + 4 = \begin{array}{|c|} \hline 54 \\ \hline 90 \\ \hline 200 \\ \hline \end{array}$$

12. Circle every expression that is equal to 6.

A. $6 \times 3 - 12$

B. $2^3 + 2$

C. $3^2 - 3$

D. $12 \div 6 + 2^2$

E. $18 - 4 + 7 - 10$



LESSON SE 3a



Objective

Arnold had n squared balloons. He gave one half of them to his brother. He also gave 5 balloons to Peggy. Then Arnold's father gave him n balloons. Use expressions from the box to complete the statements shown below.

Arnold's brother had _____ balloons.

Peggy had _____ balloons.

Arnold had _____ balloons remaining.

- n
- n^2
- $\frac{1}{2}n^2$
- 5
- $5n$
- $\frac{1}{2}n^2 - 5 + n$
- $n^2 + 5 - n$
- $n^2 - 5 + n$

The volume of a cube can be found by using the formula $V = s^3$, where s is the side length of the cube. The surface area of a cube can be found by using the formula $A = 6s^2$, where s is the side length of the cube. Jake has two cubes. The first cube has a side length of 8 centimeters. The second cube has a side length of 2 centimeters. Use numbers from the box to complete the statements shown below.

The volume of the first cube is _____ cm^3 .

The volume of the second cube is _____ cm^3 .

The volume of the first cube is _____ times the volume of the second cube.

The surface area of the first cube is _____ cm^2 .

The surface area of the second cube is _____ cm^2 .

The surface area of the first cube is _____ times the surface area of the second cube.

- 8
- 16
- 24
- 64
- 384
- 512