

# Order of Operations

Use the order of operations to find the value of an expression with more than one operation.

Solve:  $3 \times (4 + 5) + 6 \div 3$

First, perform the operation inside the **parentheses**.

Next, **multiply** and **divide** in order from left to right.

Finally, **add**.

$$3 \times (4 + 5) + 6 \div 3$$

$$\begin{array}{c} \uparrow \\ 4 + 5 = 9 \end{array}$$

$$3 \times 9 + 6 \div 3$$

In this case,  $3 \times 9$  is solved first, then  $6 \div 3$ .

$$\begin{array}{c} \uparrow \\ 27 + 2 = 29 \end{array}$$

## Practice

Circle the operation or operations that should be completed first.

1.  $2 + 3 + (4 \times 6) - 7$

2.  $3 \times 5 + 2 + 4$

3.  $(2 \div 1) \times 4 \times 10$

4.  $5 + 5 + 5 + 10 \div 5$

5.  $5 \times (3 - 2) + 7$

6.  $7 \times 6 \div 7 \times (5 + 5)$

# Order of Operations

You can use the order of operations to help you solve expressions with exponents. An **exponent** of a number tells us how many times to multiply a base number.

Solve:  $3 + 2^3 \times (4 - 1) \div 2$

First, perform all operations within **parentheses**.

Next, perform all operations with **exponents**. The exponent of 3 tells us we will multiply the base, 2, three times.

Then, **multiply** and **divide** in order from left to right.

Finally, **add** and **subtract** in order from left to right.

$$3 + 2^3 \times (4 - 1) \div 2$$
$$3 + 2^3 \times 3 \div 2$$

$$3 + 2^3 \times 3 \div 2$$
$$2^3 = 2 \times 2 \times 2$$
$$3 + 8 \times 3 \div 2$$

$$3 + 8 \times 3 \div 2$$
$$3 + 24 \div 2$$
$$3 + 12$$

$$3 + 12 = 15$$

## Practice

Find the value of each expression.

1.  $5 \times (5 - 3)$  \_\_\_\_\_

2.  $(7 \times 8) - (4 \times 9)$  \_\_\_\_\_

3.  $15 \div 3 + 16 \div 4$  \_\_\_\_\_

4.  $3^2 + 5 - 1 \times 2$  \_\_\_\_\_

5.  $24 \div 2 + (3 \times 4)$  \_\_\_\_\_

6.  $(40 - 10) \times 10^2$  \_\_\_\_\_

7.  $8 \times 8 \div 8 + 8 - 8$  \_\_\_\_\_

8.  $20 + (2^4 - 8) \times 2$  \_\_\_\_\_