

## Pre-Algebra

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**Essential Question:** How do we multiply and divide integers?

**Do Now:** Complete Table 1 below. Look for a pattern to help you.

Table 1

Expression	Product
$4 \times 3$	12
$4 \times 2$	8
$4 \times 1$	4
$4 \times 0$	0
$4 \times -1$	
$4 \times -2$	
$4 \times -3$	

Table 2

Expression	Product
$-4 \times 3$	
$-4 \times 2$	
$-4 \times 1$	
$-4 \times 0$	
$-4 \times -1$	
$-4 \times -2$	
$-4 \times -3$	

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### Multiplying and Dividing Integers

When multiplying or dividing integers, if the signs are the \_\_\_\_\_, the product or quotient is \_\_\_\_\_. If the signs are \_\_\_\_\_, the product or quotient is \_\_\_\_\_.

**Find the product or quotient.**

- $(3)(-5)$
- $(-9)(-4)$
- $-50 \div 25$
- $-120 \div -8$
- $(-12)(9)$
- $\frac{-20}{5}$
- $(-2)(3)(-7)$
- $(-4)^2$

**Complete the table below.**

Expression	Number of Integers	Product	Sign of Product
$-1(-1)$			
$-1(-1)(-1)$			
$-1(-1)(-1)(-1)$			
$-1(-1)(-1)(-1)(-1)$			

**What conclusions can be drawn?**

When the product of integers has an odd number of negative factors, then the sign of the product is \_\_\_\_\_.

When a product of integers has an even number of negative factors, then the sign of the product is \_\_\_\_\_.

9.  $(-3)^3 =$  \_\_\_\_\_

10.  $(-2)^6 =$  \_\_\_\_\_

11.  $(-1)^{25} =$  \_\_\_\_\_

**Let's Review:** Complete each statement with positive, negative, or zero.

1. The product of two negative integers is \_\_\_\_\_.

2. The absolute value of zero is \_\_\_\_\_.

3. The sum of two integers that are opposites is \_\_\_\_\_.

4. The sum of two negative integers is \_\_\_\_\_.

5. The quotient of a positive integer and negative integer is \_\_\_\_\_.

**Turn and Talk** 

A. **True/False:** If  $a$  is an integer, then  $-a$  is always a negative integer. Justify your response with an example.

B. The product of three integers is  $-3$ . Determine all the possible values of the three factors.

**The TAKEAWAY**

When multiplying and dividing integers, use the same rule. If the *signs* are the *same*, then the result is \_\_\_\_\_ and if the *signs* are *different* then the result is \_\_\_\_\_.

**HW #**

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**Perform the indicated operation.**

1.  $-5 + 9$

2.  $-7 + (-10)$

3.  $(-4)(-3)$

4.  $-33 \div 11$

5.  $16 - (-7)$

6.  $(-2)^3$

7.  $26 + (-26)$

8.  $-32 + 10$

9.  $\frac{-56}{-8}$

10.  $8 - 12$

11.  $54 + (-13)$

12.  $(-5)^2$

13.  $(-3)(5)(-4)$

14.  $-10 - (-35)$

15.  $-7 - 7$

16.  $(-1)^{10}$