

*Multiplying and
Dividing Signed
Integers*

*Positive * Positive*

- When we multiply or divide two integers, the sign rules are different than when we add or subtract signed numbers.
- When we multiply or divide two positive integers, the solution is positive.

$$7 \cdot 6 = 42$$

$$12 \div 3 = 4$$

$$2 \cdot 9 = 18$$

$$16 \div 8 = 2$$

$$20 \cdot 1 = 20$$

$$8 \div 8 = 1$$

*Negative * Negative*

- When we multiply or divide two negative integers, the solution is also positive.

$$(-7) \cdot (-6) = 42$$

$$(-12) \div (-3) = 4$$

$$(-2) \cdot (-9) = 18$$

$$(-16) \div (-8) = 2$$

$$(-20) \cdot (-1) = 20$$

$$(-8) \div (-8) = 1$$

*Positive * Negative*

- When we multiply or divide one positive & one negative integer, the solution is always negative, regardless of which is larger or which is written first.

$$(-7) \cdot 6 = -42$$

$$12 \div (-3) = -4$$

$$2 \cdot (-9) = -18$$

$$(-16) \div 8 = -2$$

$$20 \cdot (-1) = -20$$

$$(-8) \div 8 = -1$$

Summary

Adding Integers:

Positive + Positive = Positive

Negative + Negative = Negative

Positive + Negative = Sign of Larger #

Subtracting Integers:

Keep - Change - Change

Multiplying/Dividing Integers:

Positive + Positive = Positive

Negative + Negative = Positive

Positive + Negative = Negative

You Try It!

Multiply or divide.

1. $(-10) \cdot 32.$ $(-4) \cdot (-3)$

3. $7 \cdot (-2)4.$ $5 \cdot (-2)$

5. $(-18) \div (-3)6.$ $(-20) \div 2$

Simplify each expression.

7. $(3)(-5x)8.$ $(-2)(-3y)$

9. $(-1)(7x)10.$ $(10)(-5c)$

Solutions

1. $(-10) \cdot 3 = -30$

2. $(-4) \cdot (-3) = 12$

3. $7 \cdot (-2) = -14$

4. $5 \cdot (-2) = -10$

5. $(-18) \div (-3) = 6$

6. $(-20) \div 2 = -10$

Solutions

$$7. \quad (3)(-5x) = -15x$$

$$8. \quad (-2)(-3y) = 6y$$

$$9. \quad (-1)(7x) = -7x$$

$$10. \quad (10)(-5c) = -50c$$