At Home

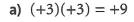
Quick Review

- ➤ Integers have these properties of whole numbers.
 - Multiplying by 0: $4 \times 0 = 0$ and $0 \times 4 = 0$ So, $(-4) \times 0 = 0$ and $0 \times (-4) = 0$
 - Multiplying by 1: $4 \times 1 = 4$ and $1 \times 4 = 4$ So, $(-4) \times (+1) = -4$ and $(+1) \times (-4) = -4$
 - Commutative Property: $4 \times 2 = 8$ and $2 \times 4 = 8$ So, $(-4) \times (+2) = -8$ and $(+2) \times (-4) = -8$
 - Distributive Property: $4 \times (2 + 3) = 4 \times 2 + 4 \times 3 = 20$ So, $(-4) \times [(+2) + (+3)] = (-4) \times (+2) + (-4) \times (+3) = -20$
- You can write the product of integers without the use of the \times sign. $(-4) \times (+2)$ can simply be written as: (-4)(+2)
- When 2 integers with the same sign are multiplied, their product is positive. (+2)(+3) = +6 (-2)(-3) = +6

When 2 integers with different signs are multiplied, their product is negative. (+2)(-3) = -6 (-2)(+3) = -6

Practice

1. Find a pattern rule for each multiplication pattern. Extend the pattern for 3 more rows.



b)
$$(-3)(+3) = -9$$

(+2)(+3) = +6

$$(-3)(+2) = -6$$

(+1)(+3) = +3

$$(-3)(+1) = -3$$

$$(0)(+3) =$$

$$(-3)(0) =$$

To find a pattern rule, look for a pattern in the integer factors and in the products.

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2. In this chart, write the sign of each product of multiplying 2 integers.

×	positive integer	negative integer
positive integer		
negative integer		

- When 2 integer factors have the same sign, their product is ______.
- When 2 integer factors have different signs, their product is ______.

3. Find each product.

a)
$$(+7)(-2) =$$

a)
$$(+7)(-2) =$$
 _____ b) $(-4)(-3) =$ _____

c)
$$(-8)(+9) =$$

d)
$$(+10)(-5) =$$
 _____ e) $(+5)(-7) =$ _____

e)
$$(+5)(-7) =$$

i)
$$(-7)(-1) = _____$$
 j) $(+5)(0) = _____$

$$j)$$
 (+5)(0) = _____

k)
$$(+20)(-20) =$$

4. Fill in the blank to make each equation true.

a)
$$(+7) \times \underline{\hspace{1cm}} = -35$$

b) _____
$$\times$$
 (-9) = +99

d)
$$\times (-5) = +20$$

d) _____ ×
$$(-5) = +20$$
 e) $(+7)$ × ____ = -49 f) ____ × $(+13) = -65$

g) _____
$$\times$$
 (-15) = -180 h) (+14) \times ____ = -140 i) ___ \times (-7) = 56

5. Match each pattern rule with the corresponding pattern. Complete each pattern and pattern rule.

Number Pattern

$$-3, +9, -27, +81, \dots$$

$$-1, -2, -4, -8, -16, \dots$$

Pattern Rule

Start at 2. Multiply by ______ each time.

Start at 1. Multiply by -10 each time.

Start at _____. Multiply by -3 each time.

Start at 3. Multiply by -1 each time.

Start at -1. Multiply by _____ each time.