

Chapter 2 Review

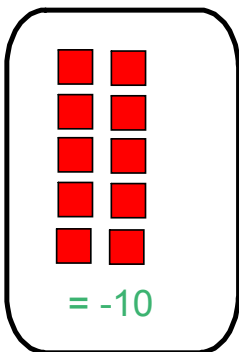
Multiplying Integers using...

- tiles
- number lines
- rules

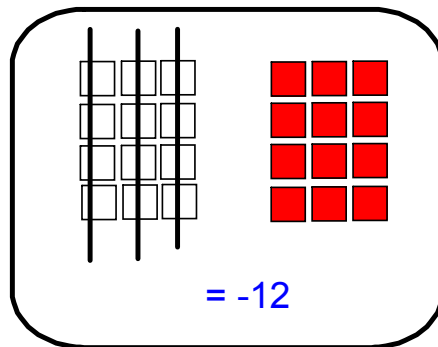
1. Tile/Bank Method

Legend $\begin{matrix} (-) & (+) \\ \blacksquare & \square \end{matrix}$

a) 2×-5
add in 2 sets of 5 red tiles



b) -3×4
remove 3 sets of 4 white tiles



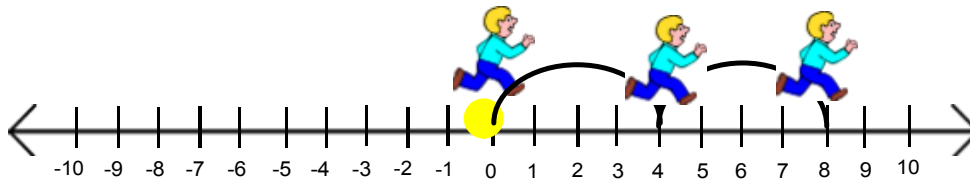
Remember:
Use zero pairs when
you start with (-)
number

2. Number Line Method

a) 2×4

Always start at 0

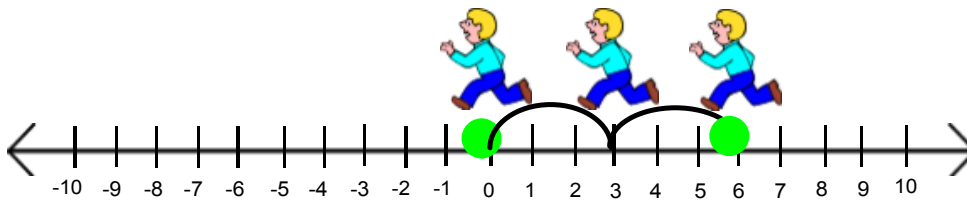
Facing right,
hop 2 steps of 4 forwards



$= +8$

b) -2×-3

facing left,
hop 2 steps of 3 backwards



3. Rules

$(+)(+) = (+)$
 $(-)(-) = (+)$  multiply by same sign - positive answer

$(+)(-) = (-)$
 $(-)(+) = (-)$  multiply by different signs - negative answer

ex: $5 \times (-4)$
 $= -20$

ex: $(-3) \times (-9)$
 $= 27$

Multiplication Properties...

Commutative Property $3 \times 8 = 24$ $8 \times 3 = 24$

Distributive Property $3(4 + 5)$
= $3 \times 4 + 3 \times 5$
= $12 + 15$
= 27

Dividing Using Integers...

- Tiles
- Number Lines
- Rules

1. Tile/Bank Method (Change division to multiplication and do the multiplication method)

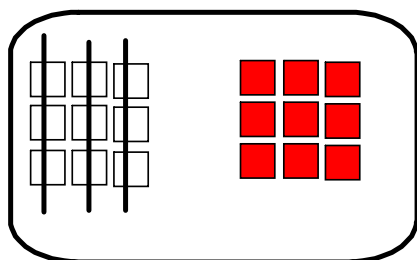
$$-9 \div 3 = \square$$

$$\square \times 3 = -9 \text{ Answer: } -3$$

Legend: $(-)$ $(+)$
 

$$-3 \times 3 = -9$$

Remove 3 sets of 3 white tiles



2. Number Line



3. Rules

$$\begin{array}{l} (+) \div (+) = (+) \\ (-) \div (-) = (+) \end{array} \left. \vphantom{\begin{array}{l} (+) \div (+) = (+) \\ (-) \div (-) = (+) \end{array}} \right\} \text{same sign - positive answer}$$

$$\begin{array}{l} (+) \div (-) = (-) \\ (-) \div (+) = (-) \end{array} \left. \vphantom{\begin{array}{l} (+) \div (-) = (-) \\ (-) \div (+) = (-) \end{array}} \right\} \text{different signs - negative answer}$$

ex: $15 \div -3 = -5$

Order of Operations

B - Brackets

E - Exponents

D } - Division or Multiplication in the order they appear
M

A } - Addition or Subtraction in the order they appear
S

$$\begin{aligned}\text{ex:} \quad & (-24) \div 12 + (-3)(-4) \\ & = -2 + (-3)(-4) \\ & = -2 + 12 \\ & = 10\end{aligned}$$

$$\begin{aligned}\text{ex:} \quad & \frac{4(-3) + 7(-4)}{5(-1)} \\ & \frac{-12 + 7(-4)}{5(-1)} \\ & \frac{-12 + -28}{5(-1)} \\ & \frac{-40}{5(-1)} \\ & \frac{-40}{-5} \\ & 8\end{aligned}$$

