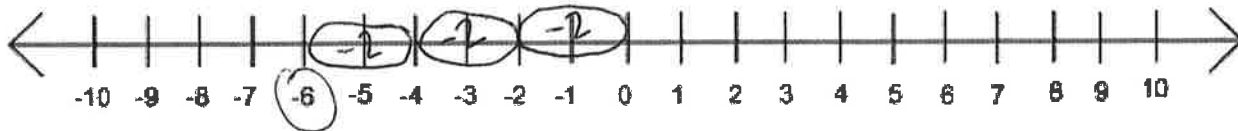


## Multiplying Integers

Draw 3(-2) on the number line.

$$3 \times (-2)$$



+

same sign

diff. sign

-

### Patterns to Multiply Integers

<b>+ times +</b>	$2 \times 5 = 10$	<b>positive answer</b>
<b>- times -</b>	$-2 \times -5 = 10$	<b>positive answer</b>
<b>- times +</b>	$-2 \times 5 = -10$	<b>negative answer</b>
<b>+ times -</b>	$2 \times -5 = -10$	<b>negative answer</b>
<b>0 times + or -</b>	$-2 \times 0 = 0$	<b>zero</b>

**You try!**

$$\begin{array}{c} + \\ - \\ 7(-2) = \underline{-14} \end{array}$$

$$\begin{array}{c} - \\ - \\ -3(-4) = \underline{12} \end{array}$$

$$\begin{array}{c} - \\ + \\ -5(3) = \underline{-15} \end{array}$$

**Challenge: Multiply.** *Hint: Multiply from left to right.*

$$\begin{array}{c} -4 \cdot 8(-2) = \underline{64} \\ \checkmark \\ -32(-2) \end{array}$$

$$(-3)5 = \underline{-15}$$

$$\begin{array}{c} + \\ \wedge \\ -7 \cdot (-14) \cdot 0 = \underline{0} \end{array}$$

$$\begin{array}{c} -4 \cdot -2(3) = \underline{24} \\ \checkmark \\ 8(3) \end{array}$$

## Dividing Integers

### Patterns to Divide Integers

+ divided by +	$10 \div 5 = 2$	positive answer
- divided by -	$-10 \div -5 = 2$	positive answer
- divided by +	$-10 \div 5 = -2$	negative answer
+ divided by -	$10 \div -5 = -2$	negative answer
+ or - divided by 0	$-2 \div 0 = 0$	zero

**You try!**

$$225 \div (-15) = \underline{-15}$$

$$\begin{array}{r} 15 \\ -15 \overline{) 225} \\ \underline{-15} \phantom{0} \\ 75 \\ \underline{-75} \\ 0 \end{array}$$

$$-80 \div (-10) = \underline{8}$$

$$- \div - = +$$

$$-25 \div (5) = \underline{-5}$$

$$- \div + = -$$

Remember: A negative sign outside of parentheses means multiply by -1.

$$-(4+2) = -(6) = -1(6) = -6$$

**Challenge:**

$$-(-15 \div 5) + (-6 + 2) = \underline{\quad}$$

$$\begin{array}{c} \checkmark \\ -1(-3) + (-4) \end{array}$$

$$\begin{array}{c} \checkmark \\ 3 + (-4) = \boxed{-1} \end{array}$$

$$-10 \div (-2) \cdot -4 + 3^2 = \underline{\quad}$$

$$\begin{array}{c} \checkmark \qquad \downarrow \\ 5 \cdot (-4) + 9 \end{array}$$

$$\begin{array}{c} \checkmark \\ -20 + 9 = \boxed{-11} \end{array}$$