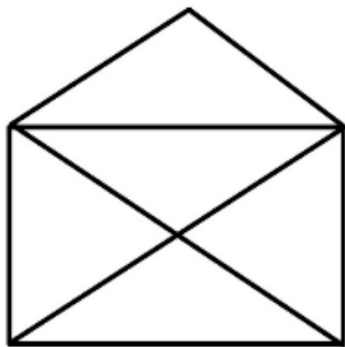


SEPTEMBER 16, 2014 ^{5TH} _{6TH}

STARTER

How many different ways can you trace the image below with one continuous line that doesn't retrace any lines?



At least 10 to get a "2" for a score.

9/16 - Multiplying Integers

"Multiplication is repeated addition."

Discuss with your partner why it is true and be ready to share.

Numerical example:

$$\begin{aligned} 3 \times 2 &= 3 + 3 \\ &= 2 + 2 + 2 \end{aligned}$$

Integer counters



$$3 \times 2 = \begin{array}{c} \text{+} \text{+} \text{+} \\ \text{+} \text{+} \end{array} + \begin{array}{c} \text{+} \text{+} \text{+} \\ \text{+} \text{+} \end{array} = 6$$

of

$$3 \times (-2) = \begin{array}{c} \text{-} \text{-} \\ \text{-} \text{-} \\ \text{-} \text{-} \end{array} + \begin{array}{c} \text{-} \text{-} \\ \text{-} \text{-} \\ \text{-} \text{-} \end{array} + \begin{array}{c} \text{-} \text{-} \\ \text{-} \text{-} \\ \text{-} \text{-} \end{array} = -6$$

$$2 \times (-3) = \begin{array}{c} \text{-} \text{-} \text{-} \\ \text{-} \text{-} \text{-} \end{array} + \begin{array}{c} \text{-} \text{-} \text{-} \\ \text{-} \text{-} \text{-} \end{array} = -6$$

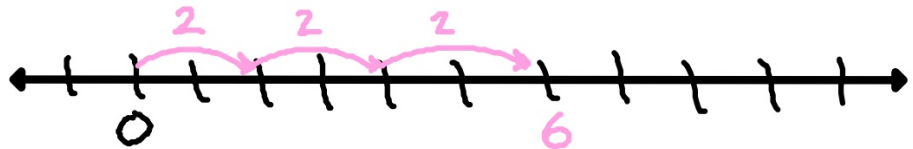
$$4 \times (-3) = -12$$

$$\begin{array}{c} \text{-} \text{-} \text{-} \\ \text{-} \text{-} \text{-} \\ \text{-} \text{-} \text{-} \\ \text{-} \text{-} \text{-} \end{array}$$

Numberlines

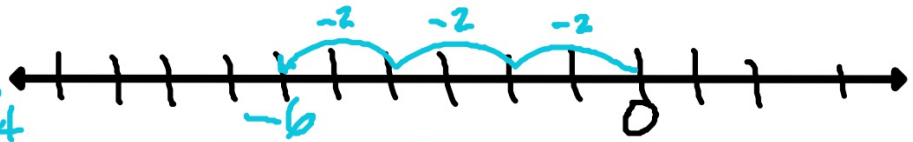
$$3 \times 2$$

3 hops right 2



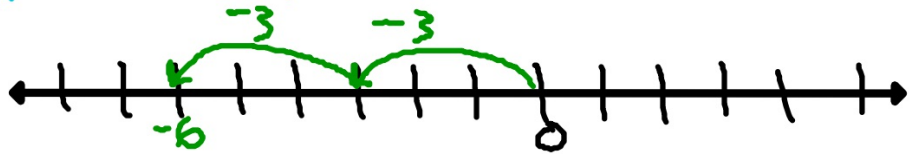
$$3 \times (-2)$$

3 hops 2 to the left



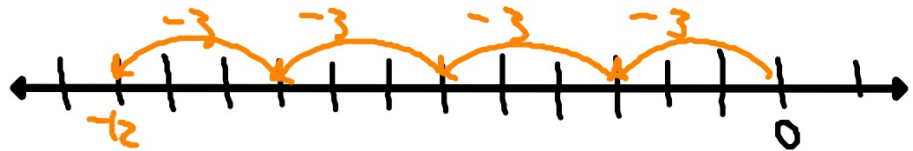
$$-3 \times 2$$

left 3 2 hops



$$4 \times (-3)$$

hops direction & size



Patterns

Work with a partner. Use a table to find $-3 \bullet 2$.

Describe the pattern of the products in the table. Then complete the table.

2	•	2	=	4
1	•	2	=	2
0	•	2	=	0
-1	•	2	=	-2
-2	•	2	=	-4
-3	•	2	=	-6

Counting down by 1

Counting down by 2

$-3 \bullet 2 = \underline{-6}$

Work with a partner. Use a table to find $-3 \cdot (-2)$.

Describe the pattern of the products in the table. Then complete the table.

-3	•	3	=	-9
-3	•	2	=	-6
-3	•	1	=	-3
-3	•	0	=	0
-3	•	-1	=	3
-3	•	-2	=	6

Handwritten notes:
Vertical text on the left: "count down by 1's"
Vertical text on the right: "count down by 1's"
A blue highlight is on the first column.

← finish for HW

$$-3 \cdot (-2) = \underline{\hspace{2cm}}$$



RULES

Person	Action	Result
$+$ Batman	\times \$	$=$ $+$ Good
$+$ Batman	\times Hit by a Truck	$=$ $-$ Bad
$-$ Joker	\times \$	$=$ $-$ Bad
$-$ Joker	\times Hit by a truck	$=$ $+$ Good

$+$ $-$



HOMEWORK

DUE