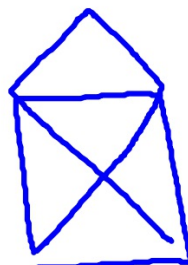
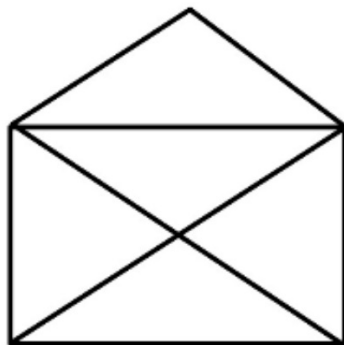
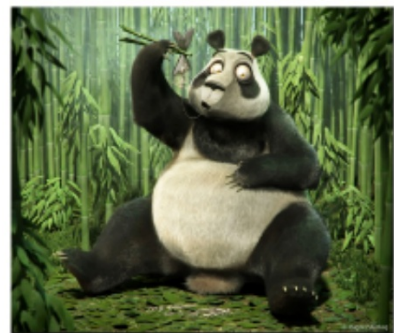


SEPTEMBER 16, 2014 ^{1ST} ^{2ND}

STARTER

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



9/16 - Multiplying Integers

"Multiplication is repeated addition."

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

4×5 is like $4 + 4 + 4 + 4 + 4$
Add 4 five times

Numerical example:

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

Integer counters



$$3 \times 2 = \begin{array}{cccccc} + & + & + & + & + & + \\ + & + & + & + & + & + \end{array} = 6$$

$$3 \times (-2) = \begin{array}{cccccc} - & - & - & - & - & - \\ - & - & - & - & - & - \end{array} = -6$$

$$2 \times (-3) = \begin{array}{cccccc} - & - & - & - & - & - \\ - & - & - & - & - & - \end{array} = -6$$

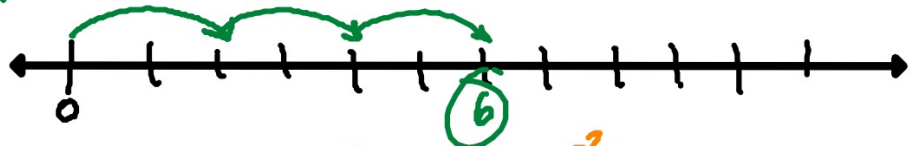
$$4 \times (-3) = -12$$

$$\begin{array}{cccccc} - & - & - & - & - & - \\ - & - & - & - & - & - \\ - & - & - & - & - & - \\ - & - & - & - & - & - \end{array}$$

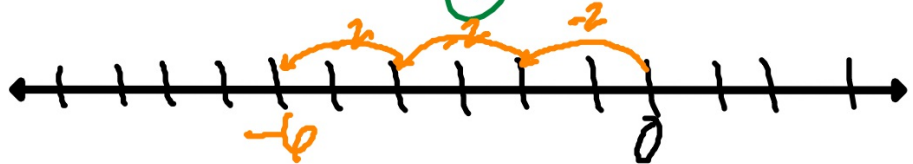
Numberlines

move 2, threetimes

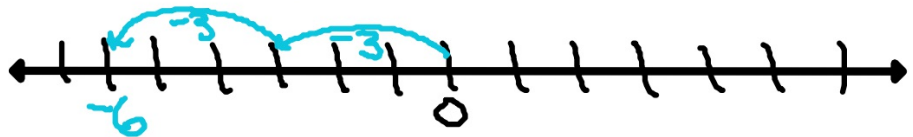
$$3 \times 2$$



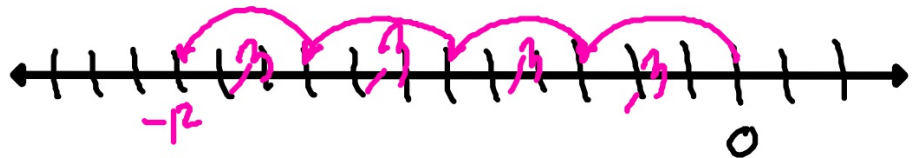
$$3 \times (-2)$$



$$2 \times (-3)$$



$$4 \times (-3)$$



Patterns

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.

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

Counting down

Counting down by 2

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

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	\cdot	3	$=$	-9	Count up by 3 Count down by 3
-3	\cdot	2	$=$	-6	
-3	\cdot	1	$=$	-3	
-3	\cdot	0	$=$	0	
-3	\cdot	-1	$=$	3	
-3	\cdot	-2	$=$	6	

$$-3 \cdot (-2) = \underline{6}$$

RULES

Person Action

+	×	+	=	+
Batman	wins	the lottery		Good
+	×	-	=	-
Batman	hit by	a truck		Bad
-	×	+	=	-
Joker				Bad
-	×	-	=	+
Joker				Good



HOMEWORK
Yellow WS 5

DUE Wednesday