MULTIPLYING INTEGERS Name________________________

1. Modelling multiplication with number lines:
   - First number indicates how many normal/opposite jumps
   - Second number indicates the size of each jump

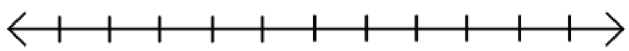
Examples:

2. $(2)(5) =$

________ normal/opposite jumps of ________

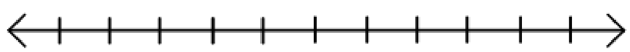
3. 7−2=

________ normal/opposite jumps of ________



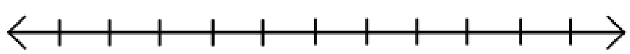
4. $(-3)(3) =$

________ normal/opposite jumps of ________



5. $(-4)(-6) =$

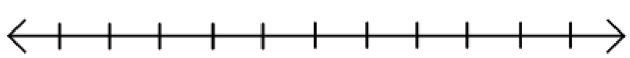
________ normal/opposite jumps of ________



You Try:

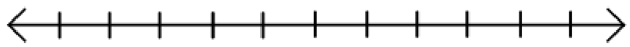
1. $(4)(-3) =$

________ normal/opposite jumps of ________



6. $(-2)(-7) =$

________ normal/opposite jumps of ________



7. Some multiplication reminders:
8. Anything multiplied by 0 = ________
   a. Example: (-5)(0) =

9. Anything multiplied by (+1) = ________________________
   a. Example: (9)(1) =

10. (1)(2)(3) = (3)(2)(1) = (2)(3)(1)= (2)(1)(3)

$(+)(+) =$ ____ Example: $(4)(6) =$

$(+)(-) =$ Example: $(7)(-3) =$

$(-)(+) =$ Example: $(-2)(5) =$

$(-)(-) =$ Example: $(-3)(-6) =$

You Try:

1. $(4)(0) =$
2. $(-7)(2) =$
3. $(11)(-6) =$
4. $(9)(7)(0) =$
5. $(8)(7) =$
6. $(-4)(-5)(-4) =$
7. $(-5)(3)(-2) =$
8. $(5)(-3)(-10) =$
9. $(2)(7)(-5) =$
10. $(-14)(2)(3) =$

Modelling multiplication with colored tiles

- Shaded tiles = $(-)$
- First number indicates adding/removing this many groups
- Second number indicates the size of each group

Examples:

a. $6 \times 2 =$ Add/remove ____ groups of ____	b. $(4)(-2) =$ Add/remove ____ groups of ____
c. $(-3)(2) =$ Add/remove ____ groups of ____	d. $(-2)(-4) =$ Add/remove ____ groups of ____

- Division is OPPOSITE of multiplication
- Eg. $(3)(8) =$ ________ → _________ normal/opposite jumps of _____ to get _____

$24 \div 8 =$__________ →how many jumps of ______ in ______

Answer: ______________________

- The rules for dividing integers are the same as for multiplying
- Fill in the table below:

$\div$	$+$	$-$
$+$		
$-$		

- Fractions are a shorthand for division - $\frac{a}{b} = a \div b$
  - Eg. $\frac{21}{7} = 21 \div 7 = 3$
- $\frac{0}{\text{anything}} = 0$ Eg. $\frac{0}{10} = 0$
- $\frac{\text{anything}}{0} = \text{not possible}$ Eg. $\frac{10}{0} = \text{not possible}$

You Try:

1. $(-30) \div (5) =$
2. $(-10) \div (-5) =$
3. $(-24) \div (6) =$
4. $14 \div 7 =$