



○ = -

● = +

Warm Up Grade 8



1) Use rules to find the quotient $(-18) \div (-9)$ then write 2 multiplication statements using the statement. *same (+2)*

$(+2) \times (-9) = (-18)$
 $(-9) \times (+2) = (-18)$

2) Use rules to find the quotient of

$(-10) \div (-2) = (+5)$
Same

3) Find the product using the distributive property *(Box)* show all work

$(-32) \times (+51) = -1632$
diff

	30	2	
50	$50 \times 30 = 1500$	$50 \times 2 = 100$	1500
1	$1 \times 30 = 30$	$1 \times 2 = 2$	100 30 2
			+ 1632

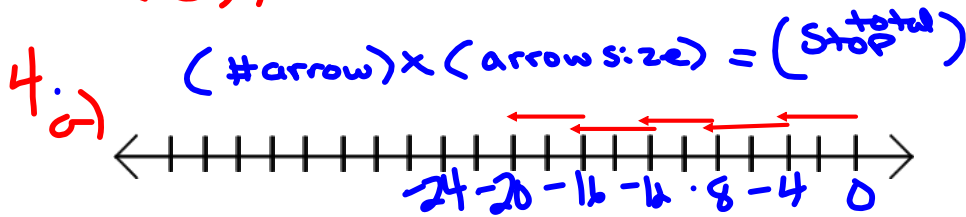
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3a) $(+25) \div (+5) = +5$
 $(+5) \times (+5) = +25$

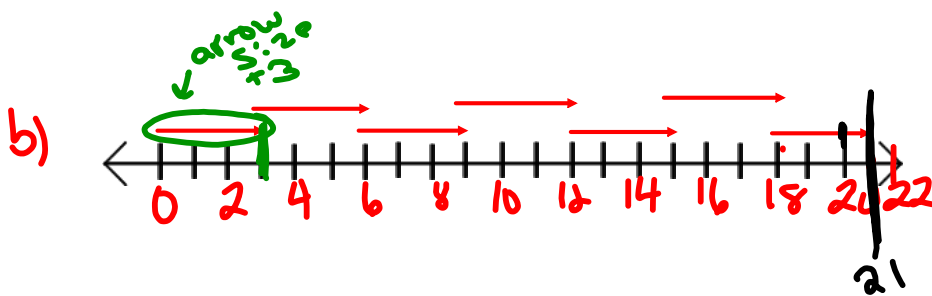
b) $(+24) \div (-2) = -12$
 $(-2) \times (-12) = +24$
 or $(-12) \times (-2) = +24$

c) $(-14) \div (-7) = +2$
 $(-7) \times (+2) = -14$
 or $(+2) \times (-7) = -14$

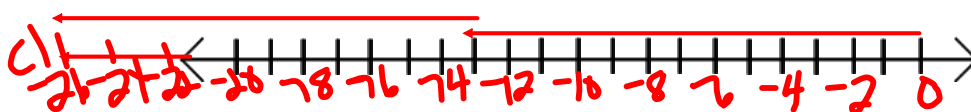
d) $(-18) \div (+6) = -3$
 $(+6) \times (-3) = -18$
 or $(-3) \times (+6) = -18$



☺ $(-20) \div (-4) = +5$

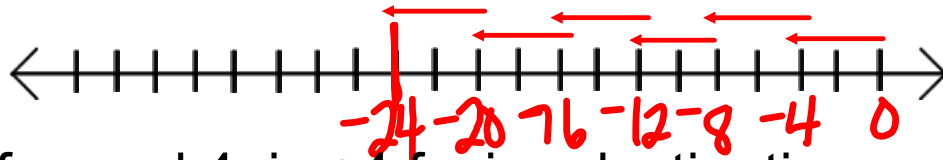


☺ $(+21) \div (+3) = +7$



☺ $(-26) \div (-13) = +2$

5.



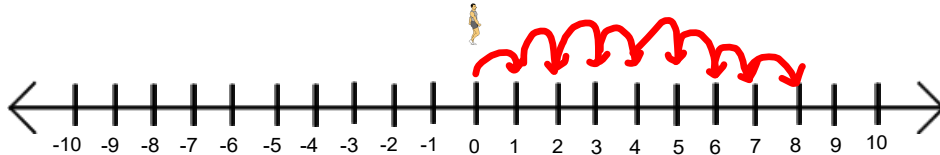
forward 4 is +4 facing destination

😊 $(-24) \div (+4) = -6$

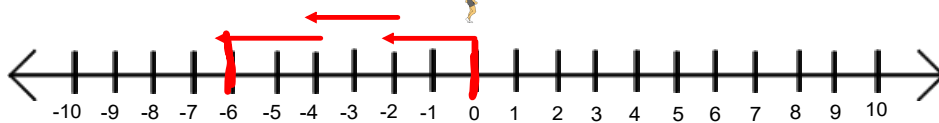
$\rightarrow (-24) \div (-4)$
 $\Rightarrow +6$

I found out by drawing the number line.

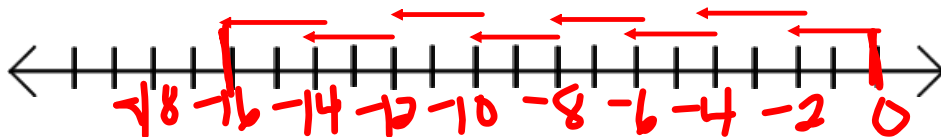
b. a) 😊 $(+8) \div (+1) = +8$



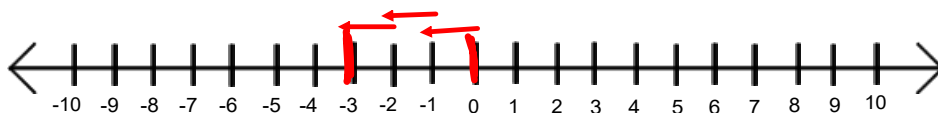
b) $(-6) \div (-2) = +3$



c) 😊 $(-16) \div (+8) = -2$



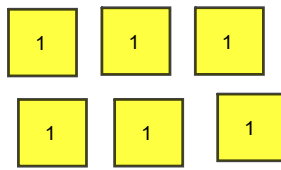
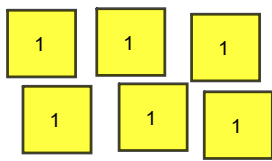
d) $(-3) \div (-1) = +3$



e) 😊 $(+15) \div (-3) = -5$

f) $(-20) \div (+2) = -10$

7a) 12 yellow tiles grouped into sets of 6 ↘ divide
↖ assume ⊕



$$(+12) \div (+6) \Rightarrow +2$$

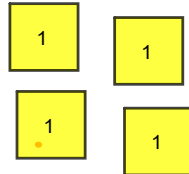
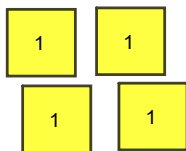
2 sets of 6
 ✂️ (+12) ÷ (+6) = +2

10) 15 red tiles in groups of 3



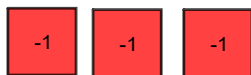
$$(-15) \div (-3) = +5$$

b) 8 yellow tiles among 2 sets



$$(+8) \div (+2) = +4$$

21 red tiles among 7 sets

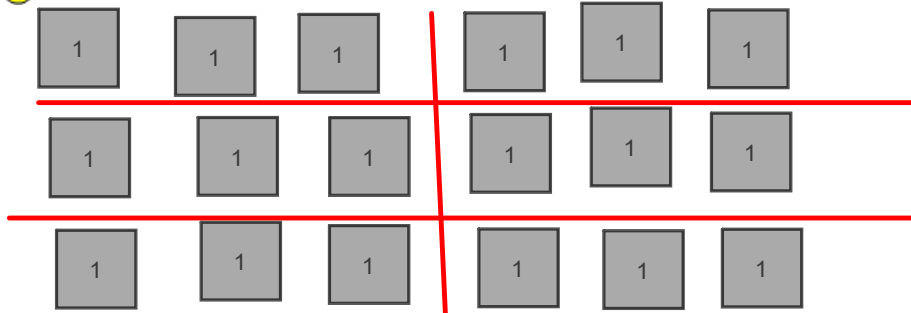


$$(-21) \div (+7) = -3$$

Dividing Using Tiles to model

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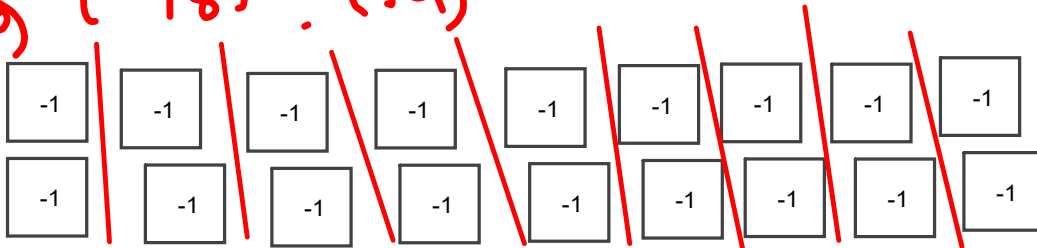
8. (a) $(+18) \div (+6) = +3$



$(+18) \div (+6) = +3$

in each group +3

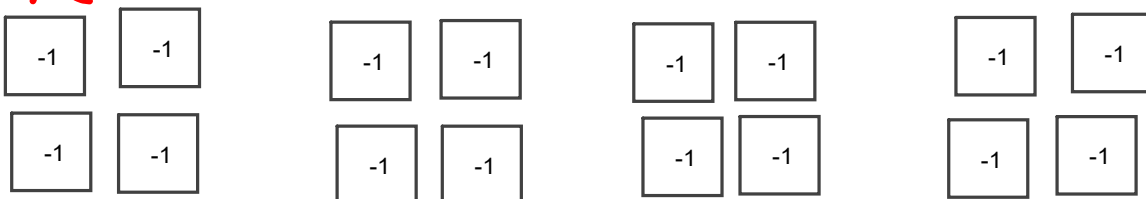
b) $(-18) \div (+9) = -2$



-2 in each group

so $(-18) \div (+9) = -2$

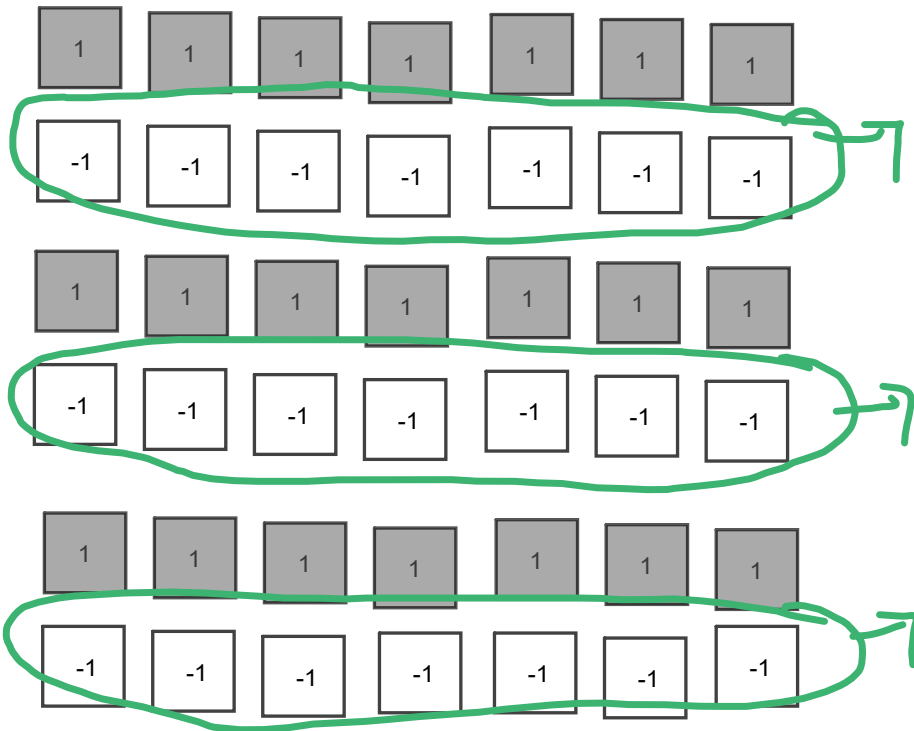
c) $(-16) \div (-4) = +4$



4 groups of -4

so $(-16) \div (-4) = +4$

d) $(+21) \div (-7) = -3$
 Take away groups of -7

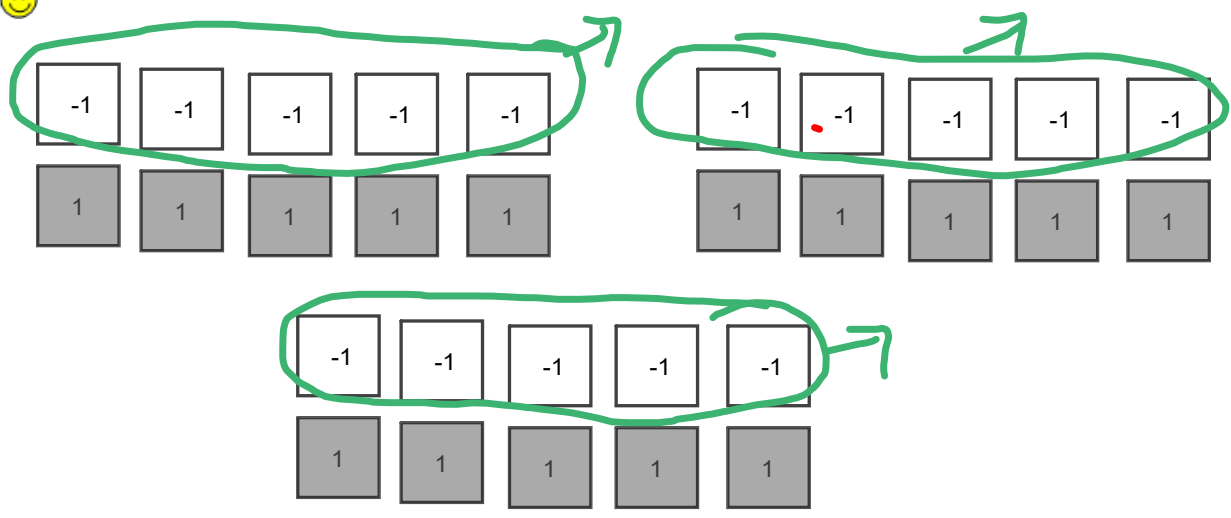


How many groups of -7 did you take away to get $+21$?

Took away 3 groups of -7

so $(+21) \div (-7) = -3$

😊 e) $(+15) \div (-5) = -3$

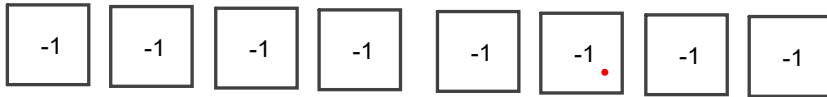
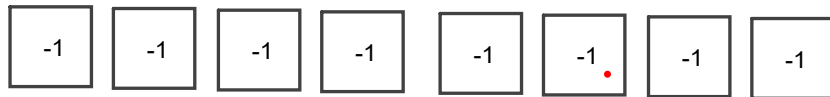


Take away groups of -5

Took away 3 groups of -5
 $(+15) \div (-5) = -3$

$$f) (-16) \div (-8)$$

Divide -16 into groups of -8



2 groups of -8

$$\text{so } (-16) \div (-8) = +2$$

Homework pg 81 #9 - model
Board question
11-16

16) Board question - Model

a) $(+12) \div (+4)$

b) $(-10) \div (-5)$

c) $(+6) \div (-2)$

d) $(-8) \div (+4)$

e) $(-4) \div (+4)$

f) $(-12) \div (-3)$

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a) $+1, +2, +4, +8, \dots$ $\xrightarrow{\times 2}$ $\xrightarrow{\times 2}$ $\xrightarrow{\times 2}$ \dots $\underline{+16}$ $\underline{+32}$ $\underline{+64}$

mult. each term by 2,

$\underline{+16}, \underline{+32}, \underline{+64}$

b) $+1, -6, +36, -216, \dots$ $\xrightarrow{\times -6}$ $\xrightarrow{\times -6}$ $\xrightarrow{\times -6}$ \dots $\underline{+1296}$ $\underline{-7776}$ $\underline{+46656}$

mult. each term by -6

$\underline{+1296}, \underline{-7776}, \underline{+46656}$

c) $-1, +3, -9, +27, \dots$

mult. each term by -3

$\underline{-81}, \underline{+243}, \underline{-729}$

d) $-4, +4, -4, +4, \dots$

mult. each term by -1

$\underline{-4}, \underline{+4}, \underline{-4}$

$$10 \quad 17 \times (-26)$$

$$\begin{array}{r} 17 \times 20 + 17 \times 6 \\ 340 + 102 \\ \hline 442 \end{array} = -442$$

*11. +9, -8, -5, +4, -2

a) greatest product
 $(-8) \times (-5) = +40$

b) least product
 $(+9) \times (-8)$

- 12 (i) $(-2) \times (-3) = +6$
 (ii) $(-2) \times (-3) \times (-4) = -24$
 (iii) $(-2) \times (-3) \times (-4) \times (-5) = +120$
 (iv) $(-2) \times (-3) \times (-4) \times (-5) \times (-6) = -720$

b) The product of an even number of negative factors is a positive
 The product of an odd number of negative factors is a negative.

c) This is true when you have both positive and negative factors.

*13. Error $(+60) \times (-20) = -1200$

$+60 \quad [(-20) + (+2)]$
 $(+60) \times (-20) + (+60) \times (+2)$
 $-1200 + (+120)$
 -1080

b) Correction $-1200 + +120 = -1080$

4. Word Problem

18) product -144
add (-7)

$$(-)(+) = -144$$

$$(-) + (+) = -7$$

List factors of 144

$$1 \times 144$$

$$2 \times 72$$

$$3 \times 48$$

$$4 \times 36$$

$$6 \times 24$$

$$8 \times 18$$

$$9 \times 16$$

$$12 \times 12$$

$$\rightarrow 9 + (-16) = -7$$

1) Multiply $(-93)(-82)$

2) Devon withdrew \$6 each week for a total withdraw of \$48. Use integers to find the number of weeks that he did this for.

key word \div

given total \Rightarrow divide

$$(-48) \div (-6) = (+8)$$

Devon withdrew \$6 for 8 weeks.

Sept. 14 **Class / Homework**

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Rules only

10a) $(+24) \div (+8) = (+3)$

#10

#14

Just solve (no word problem)

$(-) \div (-) = +$

#11,

#15

$(+) \div (-) = -$

#12

#16

$(+) \div (+) = +$

#13

Page 99 #1(a,b,c, d, e,f,g,h USE RULES)

Quiz - Friday (Tomorow)

*on multiplication modelling with tiles & rules & Box Method

*Division Rules

if you need more pg 166 # 8 to #15

