○ = -

● = +

Warm Up Grade 8

Sept. 15 ,2016

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

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

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

2) Use rules to find the quotient of

(-10) ÷ (-2) $= (+5)$

3) Find the product using the distributive property

(-32) x (+51) $= -$

show all work

$= (-30)(+50) + (-2)(+50) + (+1)(-30) + (-2)(+1)$

$= (-1500) + (-100) + (-30) + (-2)$

$= -1632$

$(+2) + (-2)$

	-30	-2
$(+50)$	$(-30)(+50) = (-1500)$	$(-2)(+50) = (-100)$
$(+1)$	$(+1)(-30) = (-30)$	$(-2)(+1) = (-2)$

$$\begin{array}{r} -1500 \\ -100 \\ -30 \\ + \quad -2 \\ \hline -1632 \end{array}$$

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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) $(-14) \div (-7) = +2$

$(-7) \times (+2) = -14$

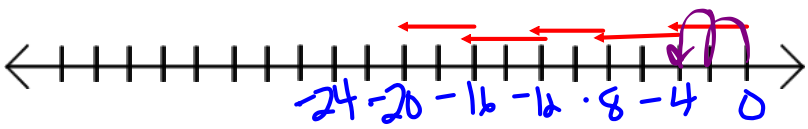
or $(+2) \times (-7) = -14$

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

$(+6) \times (-3) = -18$

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

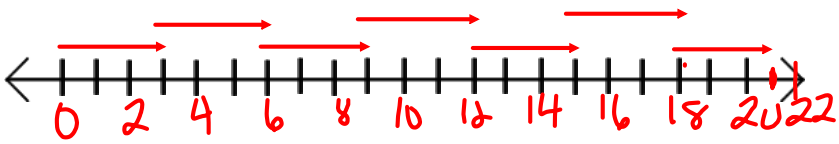
4. a)



$(-20) \div (-4) = +5$

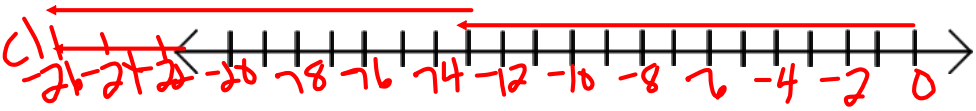
$(5) \times (\quad)$

b)



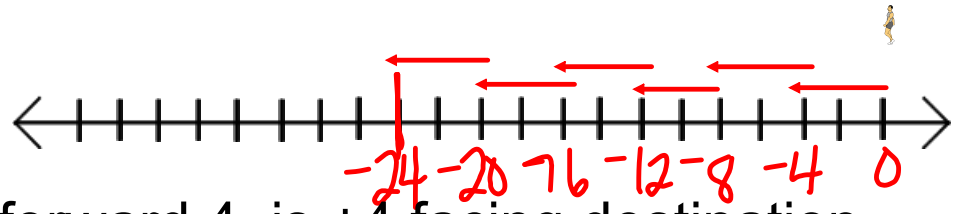
$(+21) \div (+3) = +7$

c)



$(-26) \div (-13) = +2$

5.

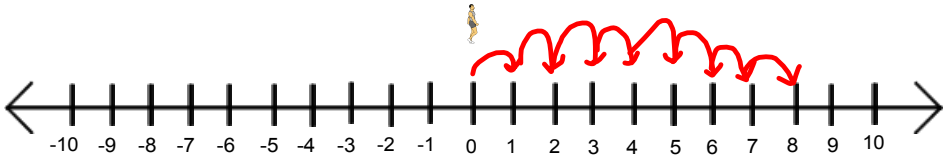


forward 4 is +4 facing destination

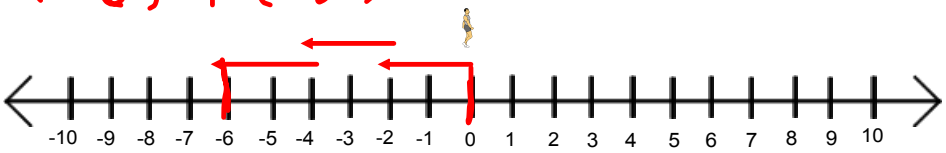
$(-24) \div (+4) = -6$

I found out by drawing the number line.

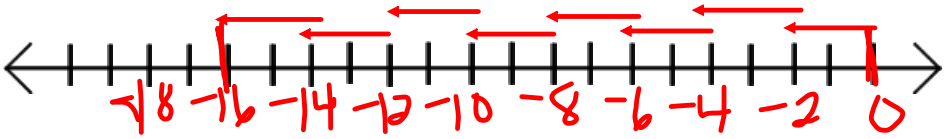
6.a) $(+8) \div (+1) = +8$



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



c) $(-16) \div (+8) = -2$

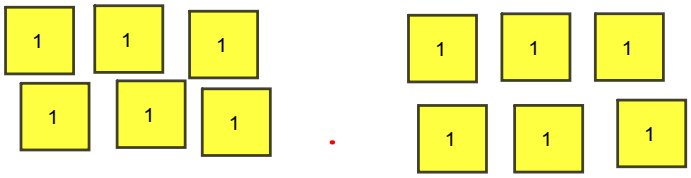


d) $(-3) \div (-1) = +3$

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

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

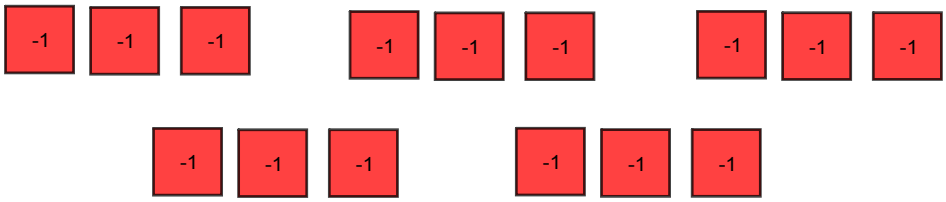
7a) 12 yellow tiles grouped into sets of 6



2 sets of 6

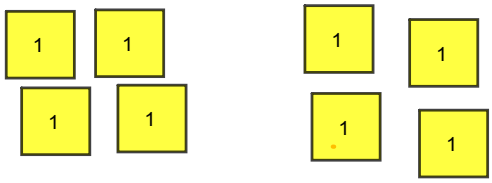
$(+12) \div (+6) = +2$

ii) 15 red tiles in groups of 3



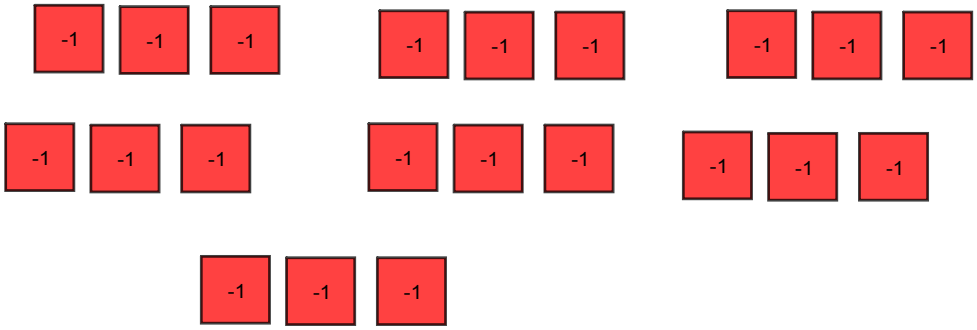
$(-15) \div (-3) = +5$

b) 8 yellow tiles among 2 sets



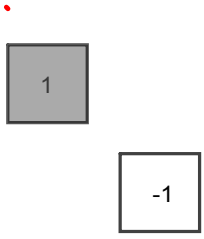
$(+8) \div (+2) = +4$

21 red tiles among 7 sets



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

Dividing Using Tiles to model



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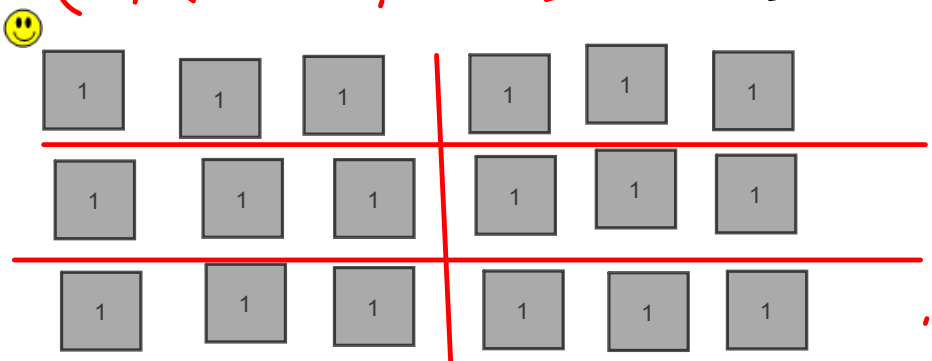
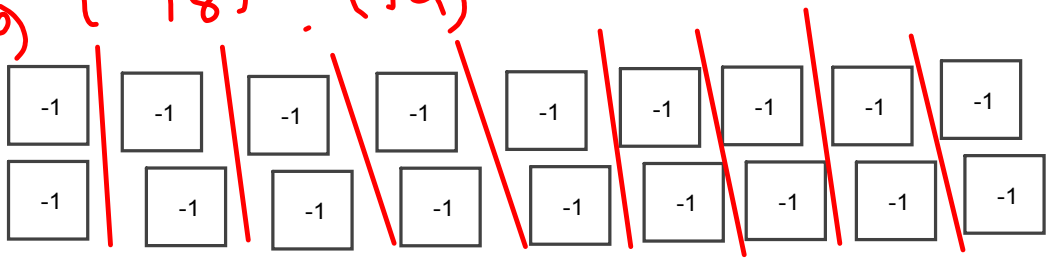
8. (a) $(+18) \div (+6) = +3$



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

in each group +3

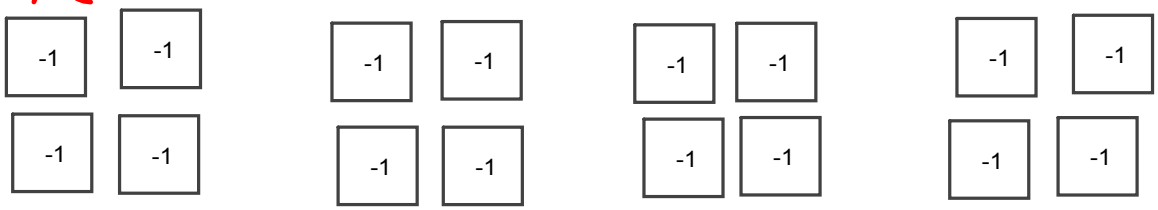
b) $(-18) \div (+9)$



-2 in each group

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

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

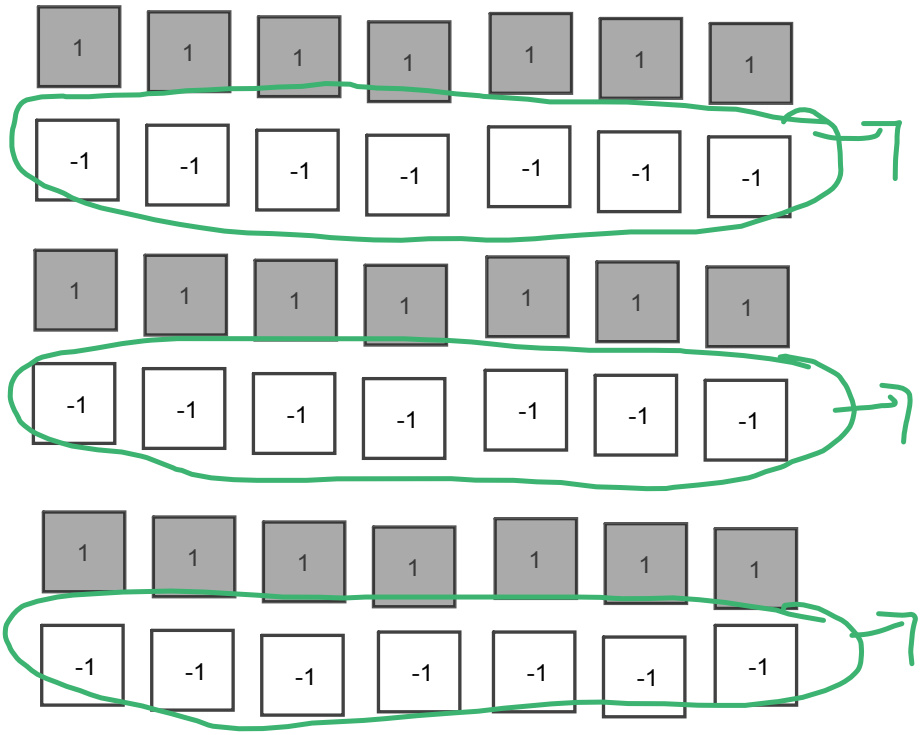


4 groups of -4

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

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

take away groups of -7

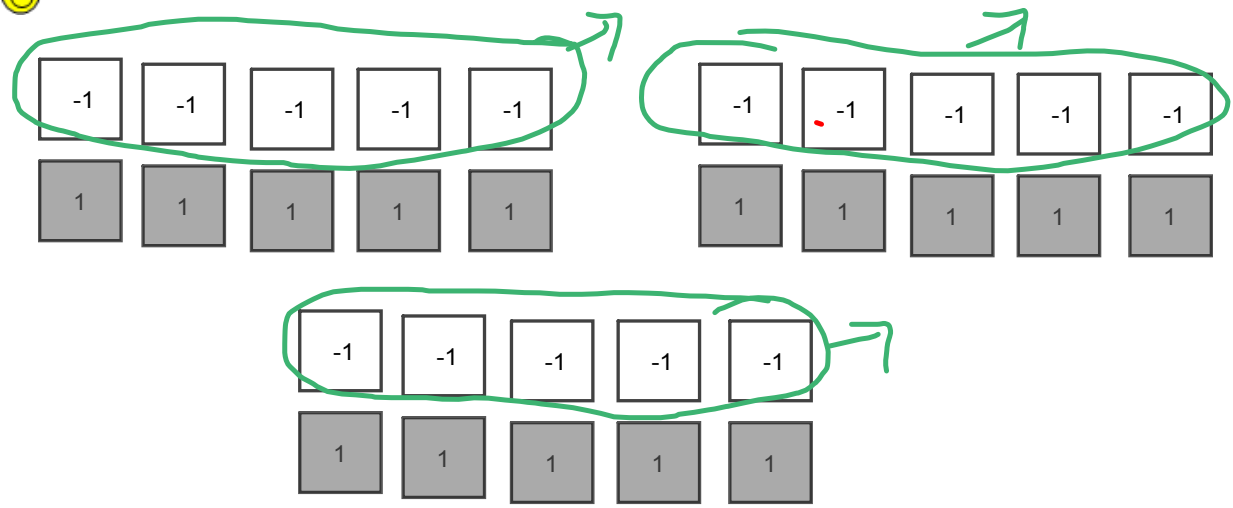


How many groups of -7 did you take away to get $+21$?

Took away 3 groups of -7

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

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



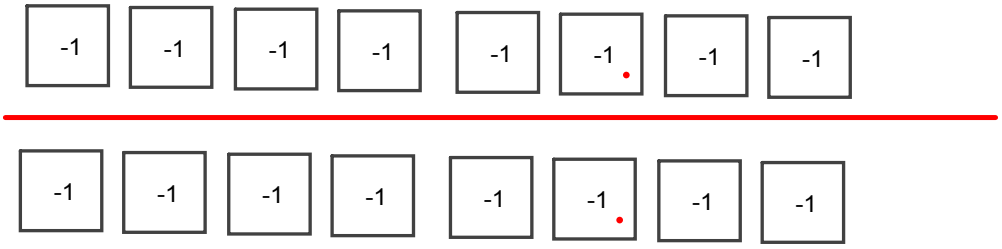
Take away groups of -5

Took away 3 groups of -5

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

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

Divide -16 into groups of -8



2 groups of -8

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

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

10

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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*9 a) +1, +2, +4, +8, . . .

mult. each term by +2,

+16, +32, +64

b) +1, −6, +36, −216,

mult. each term by −6

+1296, −7776, +46 556

c) −1, +3, −9, +27

mult. each term by −3

−81, +243, −729

d) −4, +4, −4, +4, ...

mult. each term by −1

−4, +4, −4

10 $17 \times (-26)$

$17 \times 20 + 17 \times 6$

$340 + 102$

442

$= -442$

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

a) greatest product

$(-8) \times (-5) = +40$

b) least product

$(+9) \times (-8)$

12 (i) (-2) x (-3) $= +6$

(ii) (-2) x (-3) x (-4) $= -24$

(iii) (-2) x (-3) x (-4) x (-5) $= +120$

(iv) (-2) x (-3) x (-4) x (-5) x (-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

14. Word Problem

18) product -144 $(\ )(\ ) = -144$

add (-7) $(\ ) + (\ ) = -7$

List factors of 144

1×-144
2×-72
3×-48
4×-36
6×-24
8×-18
9×-16 $\rightarrow$ $9 + (-16) = -7$
12×-12

Box Method

Multiply (-93)x(-12)

= (+1116)

	(-90)	(-3)
(-10)	(-90)(-10) + 900	(-10)(-3) +30
(-2)	(-2)(-90) +180	(-2)(-3) +6

$$\begin{array}{r} +900 \\ +180 \\ +30 \\ +6 \\ \hline +1116 \end{array}$$

Class / Homework

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#11, #12, #13, #14, #15, #16

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

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

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

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

Word problems

(Big) ÷ (small) = ____

Quiz Friday (Tomorrow)

*on multiplication modelling with tiles & rules & Box Method

*Division Rules

if you are not quiet pg 166 # 8 to #15