○ = -

● = +

Warm Up Grade 8

Same → +

diff → -

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

(-18) ÷ (-9) = (+2) (Same)

(-9) x (+2) = (-18)

(+2) x (-9) = (-18)

2) Use rules to find the quotient of

(-10) ÷ (-2) = (+5)

Same

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

(-32) x (+51)

30 2 50 1

	50	1
30	50 x 30 = 1500	1 x 30 = 30
2	2 x 50 = 100	2 x 1 = 2

1500
100
30
+ 2
1632

(-32) x (+51) = (-1632)

diff

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

$(+5) \times (+5) = +25$

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

$(-2) \times (-12) = +24$

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

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

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

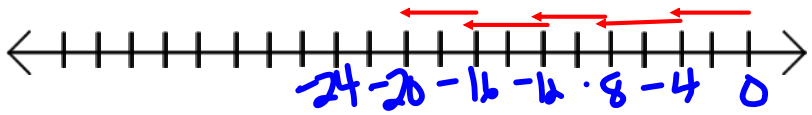
or $(+2) \times (-7) = -14$

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

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

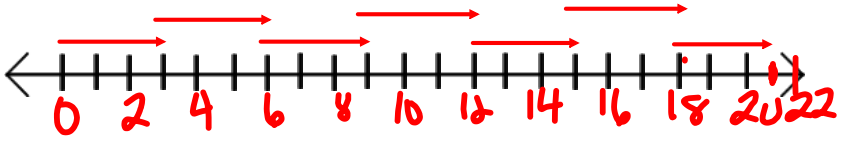
or $(-3) \times (+6) = -18$

4. a)



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

b)

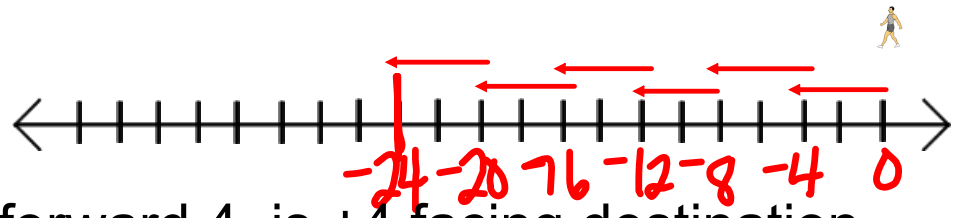


$(+21) \div (+3) = +7$

c)

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

5.

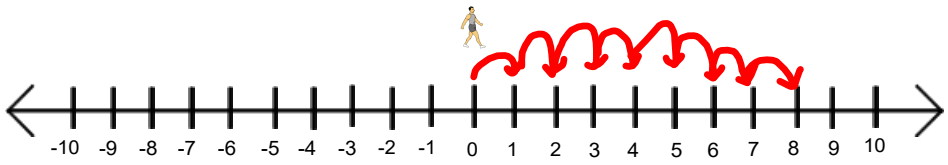


forward 4 is +4 facing destination

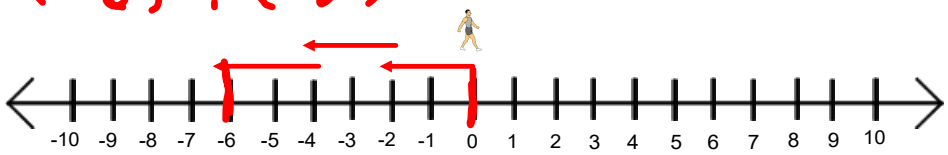
$(-24) \div (+4) = -6$

I found out by drawing the number line.

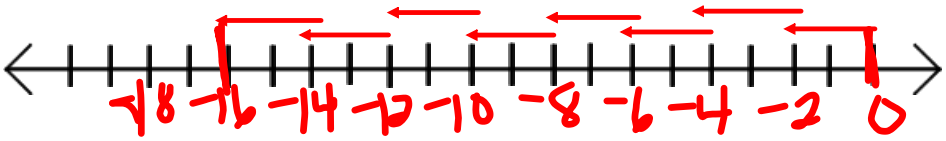
b. a) $(+8) \div (+1) = +8$



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



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

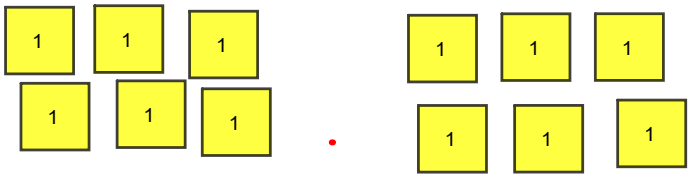


d) $(-3) \div (-11) = +3$

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

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

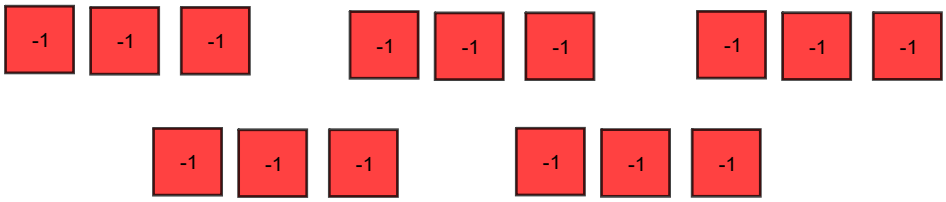
7a) 12 yellow tiles grouped into sets of 6



2 sets of 6

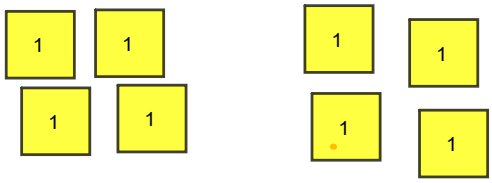
$(+12) \div (+6) = +2$

b) 15 red tiles in groups of 3



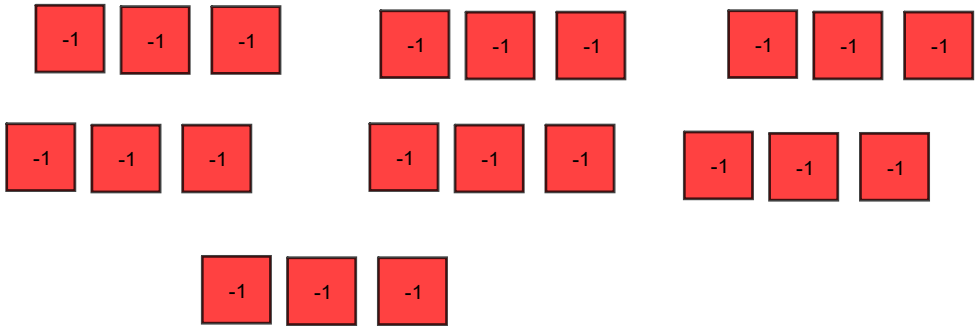
$(-15) \div (-3) = +5$

b) 8 yellow tiles among 2 sets



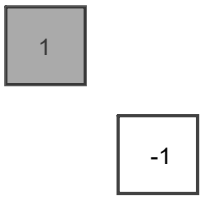
$(+8) \div (+2) = +4$

21 red tiles among 7 sets



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

Dividing Using Tiles to model



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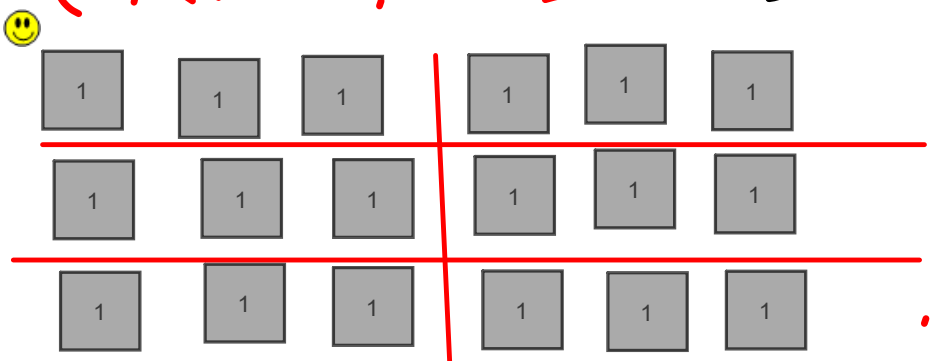
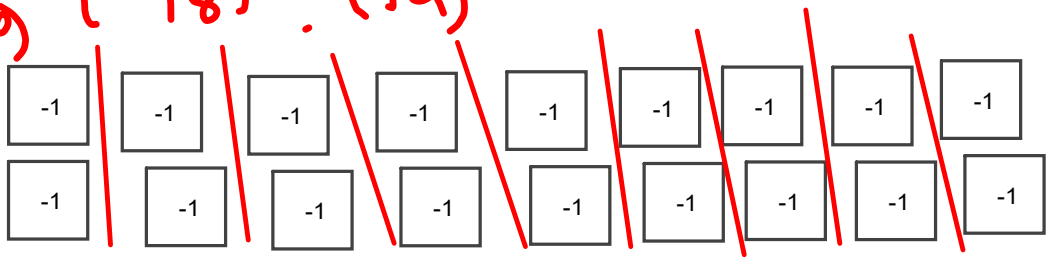
8. (a) $(+18) \div (+6) = +3$



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

in each group +3

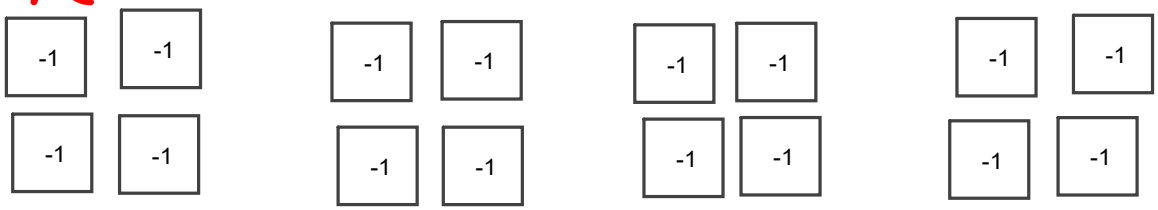
b) $(-18) \div (+9)$



-2 in each group

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

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

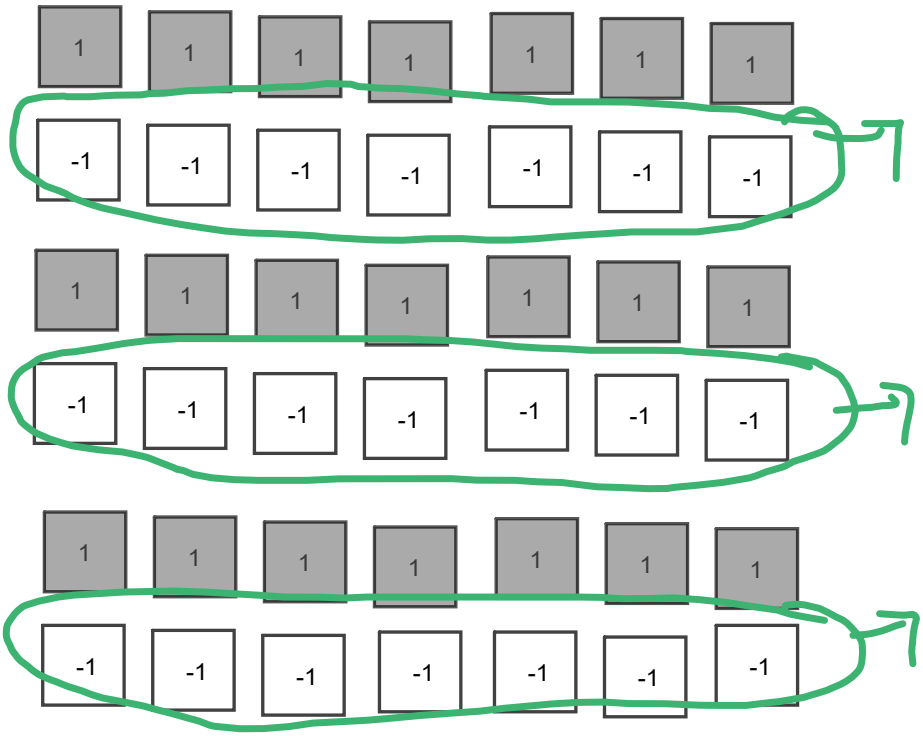


4 groups of -4

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

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

take away groups of -7

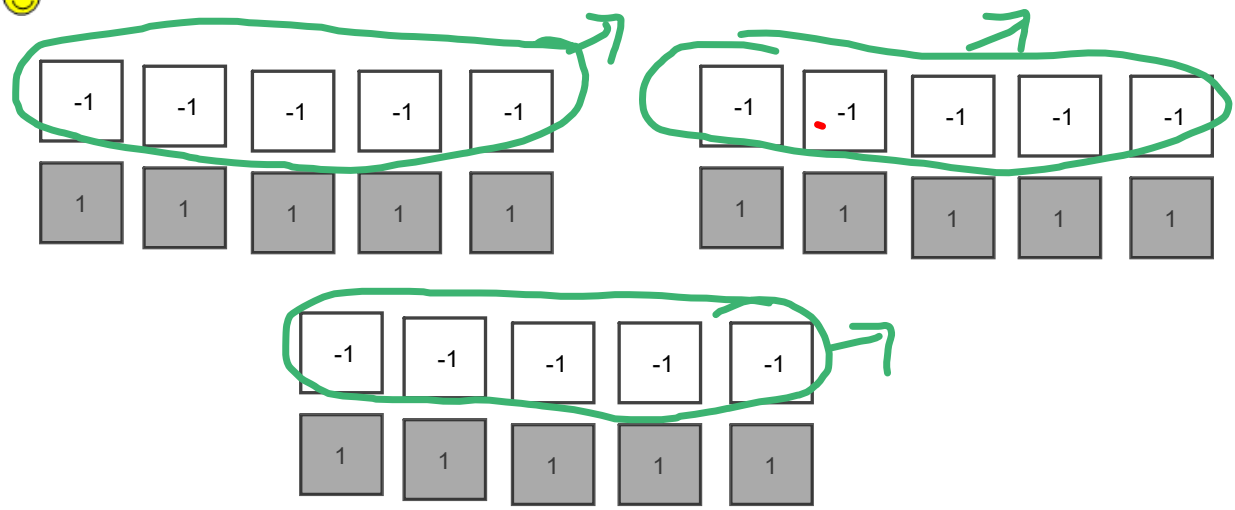


How many groups of -7 did you take away to get +21?

Took away 3 groups of -7

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

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



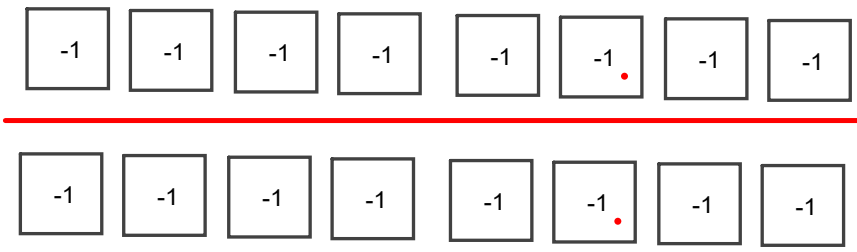
Take away groups of -5

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 questions - 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, +46 656

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 $17 \times (-26)$

$17 \times 20 + 17 \times 6$

$340 + 102 \quad = -442$

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

$+60 \quad [(-20) + (+2)]$

$(+60) \times (-20) + (+60) \times (+2)$

$-1200 \quad + (+120)$

-1080

b) Correction $-1200 + +120$

-1080

14. Word Problem

18) product -144

add (-7)

$(-)(+)=-144$

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

List factors of 144

1×-144

2×-72

3×-48

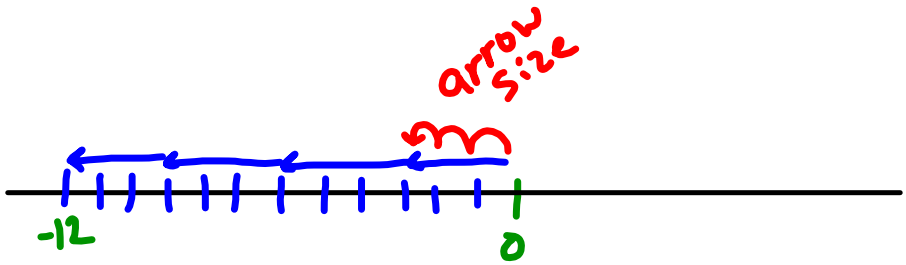
4×-36

6×-24

8×-18

9×-16 → $9+(-16)=-7$

12×-12



← Divide goes backwards

Multiplication

(# arrows) x (arrow size) = Stops

(+4) x (-3) = (-12)

← division reverse

(-12) ÷ (-3) = (+4)

(Stop) ÷ (arrow size) = (# arrows)

1) Multiply (-93) (-82)

Find total repeat → multiply

Given total → divide

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

neg

Given total

neg

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

Devon did this for 8 weeks.

Class / Homework

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#10 #14

~~#11,~~ #15

#12 #16

~~#13~~

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

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

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

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

Quiz Friday (Tomorrow)

*on multiplication modelling with tiles & rules & Box Method

*Division Rules

if you need more pg 166 # 8 to #15