



Warm Up Grade 8

Sept. 21, 2021



then quiz

Use the box method to find  $(-31) \times (-26)$

	30	1
20	$20 \times 30 = 600$	$20 \times 1 = 20$
6	$6 \times 30 = 180$	$6 \times 1 = 6$

$$\begin{array}{r} 600 \\ 180 \\ 20 \\ + 6 \\ \hline 806 \end{array}$$

$$(-31) \times (-26) = (+806)$$

Model  $(-3) \times (+5)$

Remove 3 groups of +5

$$= 12 \text{ positive units} = (-15)$$

or  $(+5) \times (-3)$

5 groups of -3

$$= (-15)$$

Page 81-82      homework solutions

11) Rose  $3^{\circ}$  each hour for a total change of  $+12^{\circ}$ .

$$(+12) \div (+3) = (+4)$$

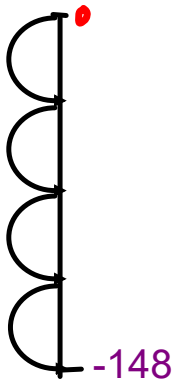
It took 4 hours for the change in temperature

12) Fell  $4^{\circ}\text{C}$  each hour for a total change of  $-20^{\circ}\text{C}$ .

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

It took 5 hours for the temperature change

13)



Made 4 identical plunges in a row to a final depth of 148 below surface.

$$(-148) \div (+4) = (-37)$$

Page 83

homework solutions

○ = -    ● = +

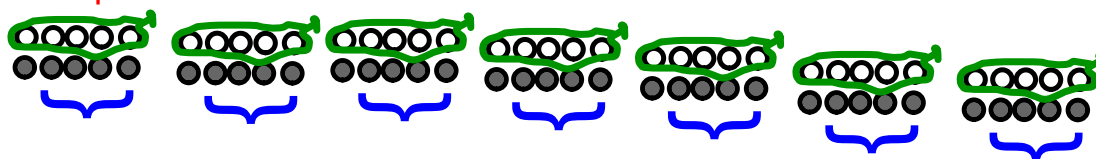
1a)  $(-9) \times (+4) = (-36)$

take away 9 groups of positive 4  
zero pairs needed



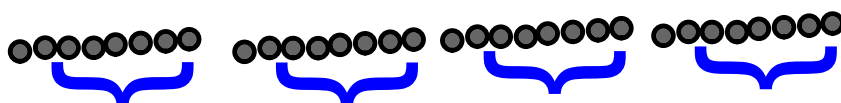
1b)  $(-7) \times (-5) = (+35)$

take away 7 groups of negative 5  
zero pairs needed



1c)  $(+4) \times (+8) = (+32)$

Put down 4 groups of positive 8



1d)  $(+3) \times (-5) = (-15)$

Put down 3 groups of negative 5



- 2) Glacier retreated 4m per day for 7 days.

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

The glacier retreated 14 m in total.

- 3) Temp rose 4°C each hour for 5 hours

$$(+4) \times (+5) = (+20)$$

The total temperature change is a rise of 20°C.

- 4) & 5)

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

b)  $(-5) \times (-3) = (+15)$

c)  $(+12) \times (-4) = (-48)$

d)  $(+8) \times (+9) = (+72)$

- 6) a)  $(-20) \times (+14)$

Rethink  $(20) \times (14)$

$$= (20) \times (10 + 4)$$

$$= (20 \times 10) + (20 \times 4)$$

$$= 200 + 80$$

$$= 280$$

put sign in

$$(-20) \times (+14) = (-280)$$

- b)  $(-19) \times (-24)$

Rethink  $(19) \times (24)$

$$= (10+9) \times (20 + 4)$$

$$= (10 \times 20) + (10 \times 4) + (9 \times 20) + (9 \times 4)$$

$$= 200 + 40 + 180 + 36$$

$$= 456$$

put sign in

$$(-19) \times (-24) = (+456)$$

- c)  $(+40) \times (+27)$

Rethink  $(40) \times (27)$

$$= (40) \times (20 + 7)$$

$$= (40 \times 20) + (40 \times 7)$$

$$= 800 + 280$$

$$= 1080$$

put sign in

$$(+40) \times (+14) = (+1080)$$

- d)  $(+13) \times (-31)$

Rethink  $(13) \times (-31)$

$$= (10+3) \times (30 + 1)$$

$$= (10 \times 30) + (10 \times 1) + (3 \times 30) + (3 \times 1)$$

$$= 300 + 10 + 90 + 3$$

$$= 403$$

put sign in

$$(+13) \times (-31) = (-403)$$

Page 83 homework solutions

7) Pool drains 35L per minute. Find how much water drained out of the pool in 30 min.

$$(-35) \times (+30) =$$

Rethink

$$(35) \times (30)$$

$$= (30 + 5) \times (30)$$

$$= (30 \times 30) + (5 \times 30)$$

$$= 900 + 150$$

$$= 1050$$

$$(-35) \times (+30) = -1050$$

Lost a total of 1050 L

$$8a) (+4) \times (-8) = -32$$

$$8b) (-9) \times (-6) = +54$$

$$8c) (-8) \times (+7) = -56$$

$$8d) (-12) \times (-1) = +12$$

$$9a) (+9) \times (+3) = +27$$

$$9b) (-2) \times (-7) = +14$$

$$9c) (+7) \times (-3) = -21$$

$$9d) (-13) \times (+2) = -26$$

11) Water level dropped 5 cm per hour. The total drop was 30 cm. How long did this take?

$$(-30) \div (-5) = +6$$

It took 6 hours for the water level to drop a total of 30 cm.

$$12) (-18) \div (+3)$$

The total debt to the librarian by 3 students was \$18. If each person owed the same amount then how much did each student owe?

### Rules for Division

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

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

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

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

Same as the  
multiplication rules

Fill in the blanks

1)  $(\underline{-9}) \times (-8) = (+72)$

2)  $(-28) \div (\underline{+4}) = (-7)$

3)  $(+60) \div (\underline{-5}) = (-12)$

Division can be written...

$$\frac{(-100)}{(+25)} = -4$$

## Class/Homework

Page 87-88

#4,

#5(a,c,e,g,i),

#8(a,d),

#9(a,c),

#10(a,b,c,d),

#11(a,b),

#12(a,b),

~~#15(a,b,d),~~

~~#16~~



## Class/Homework 80

Page 81

#12 & #13

Page 83

#1 to #12 leave out #10

Quiz Tomorrow (Friday)

on multiplication modelling & rules

Division Rules

