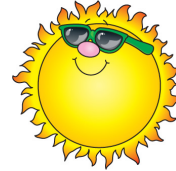




○ = -
● = +

Warm Up Grade 8

Sept. 11, 2017



1) Use tile to model the product of $(-4) \times (-2)$

$=$

 $=$

 $= +8$

Remove 4 groups
Size 2 unshaded

2) Find the product using the distributive property **Box Method**

a) $(-21) \times (46) = -966$
different

	20	1
40	$20 \times 40 = 800$	$40 \times 1 = 40$
6	$6 \times 20 = 120$	$6 \times 1 = 6$

$$\begin{array}{r}
 800 \\
 120 \\
 40 \\
 + \quad 6 \\
 \hline
 966
 \end{array}$$

b) $(-40) \times (-34) = +1360$
same sign
 40

30	$30 \times 40 = 1200$
4	$4 \times 40 = 160$

$$\begin{array}{r}
 1200 \\
 + 160 \\
 \hline
 1360
 \end{array}$$

Page 73

#3 (a,b,c,d)

#4 (a,b,c,d,e,f,g,h,i,j)

#6 (a,c,e,g) USE distributive Property

#7 (b,d,f,h) Use The Distributive Property

#8 (a,b,g,h)

Homework Solutions

$$3a) (-6) \times (+2) = (-12)$$

$$b) (+6) \times (+4) = (+24)$$

$$c) (+4) \times (-2) = (-8)$$

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

$$4a) (+8) \times (-3) = (-24)$$

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

$$c) (-3) \times (+9) = (-27)$$

$$d) (+7) \times (-6) = (-42)$$

$$e) (+10) \times (-3) = (-30)$$

$$f) (-7) \times (-6) = (+42)$$

$$g) (0) \times (-8) = 0$$

$$h) (+10) \times (-1) = (-10)$$

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

$$j) (+9) \times (-9) = (-81)$$

Page 73

#3 (a,b,c,d)

#4 (a,b,c,d,e,f,g,h,i,j)

#6 (a,c,e,g) USE distributive Property

#7 (b,d,f,h) Use The Distributive Property

#8 (a,b,g,h)

😊
6a)

$$\begin{aligned}
 & (+20) \times (+15) \\
 & (+20) \times [(+10) + (+5)] \\
 & \underbrace{(+20) \times (+10)} + \underbrace{(+20) \times (+5)} \\
 & (+200) + (+100) \\
 & = (+300)
 \end{aligned}$$

😊
6c)

$$\begin{aligned}
 & (+50) \times (-32) \\
 & = (+50) \times [(-30) + (-2)] \\
 & = \underbrace{(+50) \times (-30)} + \underbrace{(+50) \times (-2)} \\
 & = (-1500) + (-100) \\
 & = (-1600)
 \end{aligned}$$



6e)

$$\begin{aligned}
 & (-60) \times (+13) \\
 & = (-60) \times [(+10) + (+3)] \\
 & = \underbrace{(-60) \times (+10)} + \underbrace{(-60) \times (+3)} \\
 & = (-600) + (-180) \\
 & = (-780)
 \end{aligned}$$

6g)

$$\begin{aligned}
 & (+70) \times (+47) \\
 & = (+70) \times [(+40) + (+7)] \\
 & = \underbrace{(+70) \times (+40)} + \underbrace{(+70) \times (+7)} \\
 & = (+2800) + (+490) \\
 & = (+3290)
 \end{aligned}$$

Homework Solutions

#3 (a,b,c,d)
 #4 (a,b,c,d,e,f,g,h,i,j)
 #6 (a,c,e,g) USE distributive Property
 #7 (b,d,f,h) Use The Distributive Property
 #8 (a,b,g,h)

Homework Solutions

$$7b) (+25) \times (-12)$$

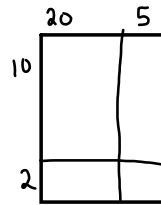
$$(25) \times (12)$$

$$= (20 \times 10) + (5 \times 10) + (2 \times 20) + (2 \times 5)$$

$$= 200 + 50 + 40 + 10$$

$$= 300$$

$$(+25) \times (-12) = (-300)$$



$$*d) (-37) \times (+18)$$

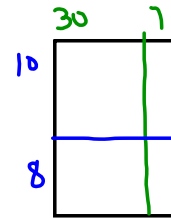
$$\text{+think} \\ (37) \times (18)$$

$$= (30 \times 10) + (10 \times 7) + (8 \times 30) + (7 \times 8)$$

$$= 300 + 70 + 240 + 56$$

$$= 666$$

$$(-37) \times (+18) = (-666)$$



$$f) (+84) \times (-36)$$

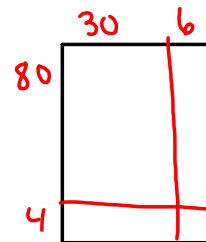
$$\text{+think} \\ (84) \times (36)$$

$$= (80 \times 30) + (80 \times 6) + (4 \times 30) + (6 \times 4)$$

$$= 2400 + 480 + 120 + 24$$

$$= 3024$$

$$(+84) \times (-36) = (-3024)$$



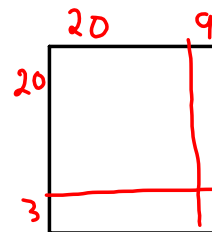
$$h) (+29) \times (+23)$$

$$= (20 \times 20) + (20 \times 9) + (20 \times 3) + (3 \times 9)$$

$$= 400 + 180 + 60 + 27$$

$$= 667$$

$$(+29) \times (+23) = (+667)$$



Page 73

#3 (a,b,c,d)

#4 (a,b,c,d,e,f,g,h,i,j)

#6 (a,c,e,g) USE distributive Property

#7 (b,d,f,h) Use The Distributive Property

#8 (a,b,g,h)

Homework Solutions

$$\text{8a)} \quad (+5) \times \underline{+4} = (+20)$$

$$\text{b)} \quad \underline{-3} \times (-9) = (+27)$$

$$\text{g)} \quad \underline{-30} \times (-6) = (+180)$$

$$\text{h)} \quad \underline{-6} \times (4) = (+24)$$

Dividing Integers reverse of multiplication

$(+7) \times (+4) = (+28)$ so we also know that $(+28) \div (+7) = (+4)$
and $(+28) \div (+4) = (+7)$

$(+5) \times (-8) = (-40)$ so we also know that $(-40) \div (-8) = (+5)$
and $(-40) \div (+5) = (-8)$

$(-9) \times (+3) = (-27)$ so we also know that $(-27) \div (+3) = (-9)$
and $(-27) \div (-9) = (+3)$

$(-6) \times (-2) = (+12)$ so we also know that $(+12) \div (-6) = (-2)$
and $(+12) \div (-2) = (-6)$

From the above information, what can you determine about

(a) a positive divided by a positive?

the answer will always be positive

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

(b) a positive divided by a negative?

The answer will always be negative

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

(c) a negative divided by a positive?

The answer will always be negative

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

(d) a negative divided by a negative?

The answer will always be positive.

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

Quotient is the number that results from the division of one number by another.

$$24 \div 3 = 8$$

↙ quotient

$$(-21) \div (+7) = \frac{-3}{1}$$

different

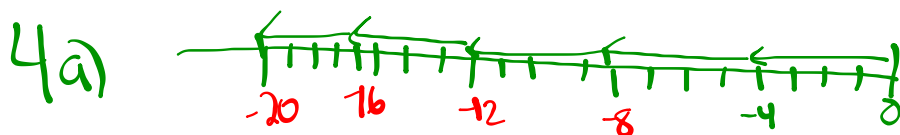
Rethink to multiplying if struggling

$$\begin{pmatrix} +7 \\ - \end{pmatrix} \times \begin{pmatrix} -3 \\ - \end{pmatrix} = -21$$

Divide the following using rules:

a) $(-21) \div (+7) = -3$ b) $(-45) \div (-9) = +5$ c) $(+24) \div (+2) = +12$

different *same*



$$(\# \text{ arrows}) \times (\text{size of arrow}) = \text{Stop}$$

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

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

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

Class/Homework

page 80 - 81

#3(a,d)

#4(a,b,c)

~~#5~~

#6(a,c,e)

#7a(i), ~~#7b~~

#8(a,c,e)

NO MODELLING

Just Use Rules

Page 74-75

#9, #11, #13, #18
_{abc ab}

Quiz Wednesday

*on multiplication modelling with tiles & rules & Box Method

*Division Rules

18)

$(-)(+) = -144$
↑ different

- $-143 \leftarrow +1, -144$
- $-70 \leftarrow +2, -72$
- $-45 \leftarrow +3, -48$
- $+4, -36$
- $+6, -24$
- $+8, -18$
- $-7 \leftarrow +9, -16$
- $0 \leftarrow +12, -12$

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

sign larger # is