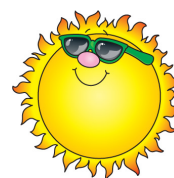




○ = -

● = +

Warm Up Grade 8



1) Use tile to model the product of $(-4) \times (-2) = (+8)$

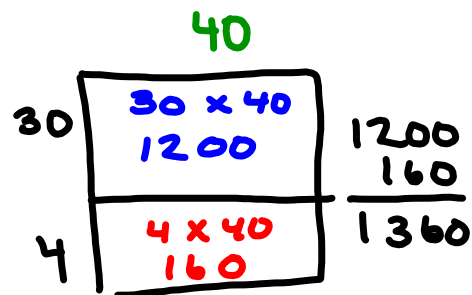
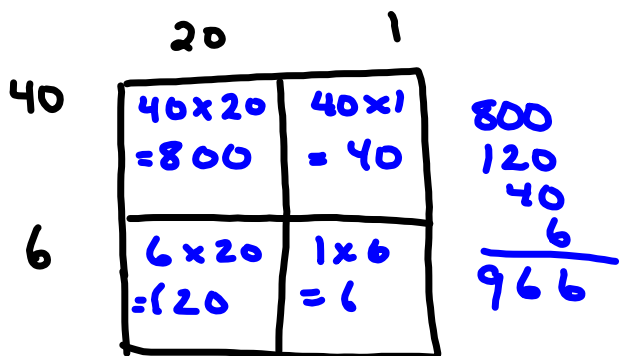


=

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

a) $(-21) \times (+46) = -966$
 (Note: 'diff' is written below with arrows pointing to the signs)

b) $(-40) \times (-34) = +1360$
 (Note: 'same' is written above with arrows pointing to the signs)



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)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Homework Solutions

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)

$$\begin{aligned}
 *6a) & \quad (+20) \times (+15) \\
 & \quad (+20) \times [(+10) + (+5)] \\
 & \quad (+20) \times (+10) + (+20) \times (+5) \\
 & \quad (+200) + (+100) \\
 & \quad = (+300)
 \end{aligned}$$

$$+20 \begin{array}{|c|c|} \hline (+10) & (+5) \\ \hline 200 & 100 \\ \hline \end{array}$$

$$\begin{aligned}
 *6c) & \quad (+50) \times (-32) \\
 & \quad (+50) \times [(-30) + (-2)] \\
 & \quad (+50) \times (-30) + (+50) \times (-2) \\
 & \quad (-1500) + (-100) \\
 & \quad = (-1600)
 \end{aligned}$$

$$+50 \begin{array}{|c|c|} \hline -30 & -2 \\ \hline & \\ \hline \end{array}$$

$$\begin{aligned}
 6e) & \quad (-60) \times (+13) \\
 & \quad (-60) \times [(+10) + (+3)] \\
 & \quad (-60) \times (+10) + (-60) \times (+3) \\
 & \quad (-600) + (-180) \\
 & \quad = (-780)
 \end{aligned}$$

$$\begin{aligned}
 6g) & \quad (+70) \times (+47) \\
 & \quad (+70) \times [(+40) + (+7)] \\
 & \quad (+70) \times (+40) + (+70) \times (+7) \\
 & \quad (+2800) + (+490) \\
 & \quad = (+3290)
 \end{aligned}$$

Homework Solutions

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

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

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

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

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

$$= 300$$

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

	20	5
10	200	50
2	40	10

	30	7
10		
8		

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

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

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

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

$$= 666$$

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

	30	6
80		
4		

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

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

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

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

$$= 3024$$

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

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

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

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

$$= 667$$

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

	20	9
20		
3		

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

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

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

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

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

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

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

Handwritten red annotations: Two arrows labeled "A.C.C" point from the top towards the numbers in the equation.

Rethink to multiplying if struggling

$$(-) \times () =$$

Divide the following using rules:

a) $(-21) \div (+7)$

↑ ↑
diff

-3

b) $(-45) \div (-9)$

↑ ↑
same

$+5$

c) $(+24) \div (+2)$

↑ ↑
same

$+12$

Class/Homework

3a) $() \div () =$

page 80 - 81

#3(a,d)

#4(a,b,c)

#5

#6(a,c,e)

#7a(i), b(i)

#8(a,c,e)

Page 74-75

#9, #11, #13, #18

$() () = +$
same

NO MODELLING

Just Use Rules

$() () = -$
different

Quiz

*on multiplication modelling with tiles & rules & Box Method

*Division Rules