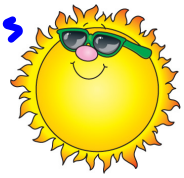
○ = -

● = +

Warm Up Grade 8

same signs



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

Remodel answer

=  (+8)

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

a) (-21) x (+46) diff

20 1 40 6

	20	1
40	40x20 = 800	40x1 = 40
6	20x6 = 120	6x1 = 6

800
120
40
+ 6
966

(-966)

b) (-40) x (-34) same

30 4

	30	4
40	30x40 = 1200	4x40 = 160

1200
+ 160
1360

= (+1360)

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#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) $(+8)(-3) = (-24)$

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

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

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

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

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

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

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

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

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

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#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

*6a) $(+20) \times (+15)$

$(+20) \times [(+10) + (+5)]$

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

$(+200) + (+100)$

$= (+300)$

*6c) $(+50) \times (-32)$

$= (+50) \times [(-30) + (-2)]$

$= (+50) \times (-30) + (+50) \times (-2)$

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

$= (-1600)$

6e) $(-60) \times (+13)$

$= (-60) \times [(+10) + (+3)]$

$= (-60) \times (+10) + (-60) \times (+3)$

$= (-600) + (-180)$

$= (-780)$

6g) $(+70) \times (+47)$

$= (+70) \times [(+40) + (+7)]$

$= (+70) \times (+40) + (+70) \times (+7)$

$= (+2800) + (+490)$

$= (+3290)$

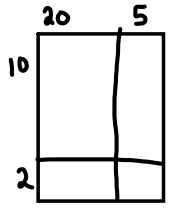
Page 73

#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

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

$(25) \times (12)$



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

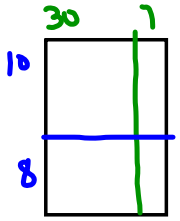
$= 200 + 50 + 40 + 10$

$= 300$

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

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

think $(37) \times (18)$



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

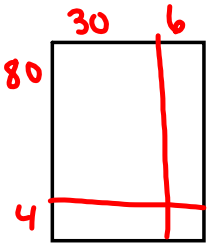
$= (300) + (70) + (240) + (56)$

$= 666$

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

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

think $(84) \times (36)$



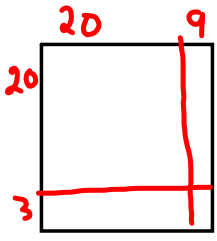
$= (80 \times 30) + (80 \times 6) + (4 \times 30) + (6 \times 4)$

$= (2400) + (480) + (120) + (24)$

$= 3024$

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

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



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

$= (400) + (180) + (60) + (27)$

$= 667$

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

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#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

Same

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

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

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

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

Dividing Integers

reverse of multiplication

(+7) x (+4) = (+28) so we also know that (+28) ÷ (+7) =(+4)
and (+28) ÷ (+4) = (+7)
(+28) ÷ (+4) = (+7)

(+5) x (-8) = (-40) so we also know that (- 40) ÷ (-8) = (+5)
and (-40) ÷ (+5) = (-8)

(-9) x (+ 3) = (-27) so we also know that (-27) ÷ (+3) = (-9)
and (-27) ÷ (-9) = (+3)

(-6) x (-2) = (+12) so we also know that (+12) ÷ (-6) = (-2)
and (+12) ÷ (-2) = (-6)

From the above information, what can you determine about

(a) a positive divided by a positive?
the answer will always be positive
(+)÷(+) = (+)

(b) a positive divided by a negative?
The answer will always be negative
(+)÷(-) = (-)

(c) a negative divided by a positive?
The answer will always be negative
(-)÷(+) = (-)

(d) a negative divided by a negative?
The answer will always be positive.
(-)÷(-) = (+)

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

24 ÷ 3 = 8 ← quotient

$12 \times 2 = 24$

$24 \div 2 = 12$

$24 \div 12 = 2$

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

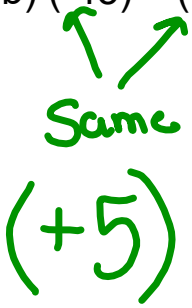
Rethink to multiplying if struggling

$(\_) \times (\quad) =$

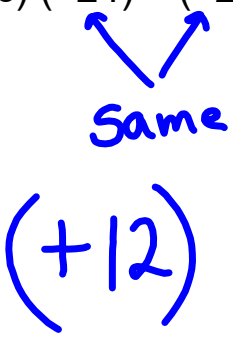
Divide the following using rules:

a) (-21) ÷ (+7)

b) (-45) ÷ (-9)



c) (+24) ÷ (+2)



Class/Homework

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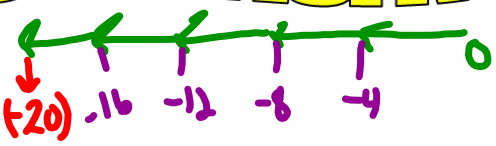
#3(a,d)
#4(a,b,c)
#5
#6(a,c,e)
#7a(i), b(i)
#8(a,c,e)

NO MODELLING

Just Use Rules

(Stop) ÷ (arrow 5:20) = # arrows

(-20) ÷ (-4) = (+5)



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#9 a c, #11, #13, #18

Quiz

*on multiplication modelling with tiles & rules & Box Method

*Division Rules

p4 11) $-5, +9, +8, +4, -2$

a) greatest product → positive → answer to multiply

b) least product → neg

$(+)(-) = +$

18) Multiply (x)

-144

neg product (+) x (-) diff

Add (+)

-7

Sign on largest is (-)

	Sum
$+1 \times -144$	-143
$+2 \times -72$	-70
$+3 \times -48$	-45
$+4 \times -36$	-32
$+6 \times -24$	-18
$+8 \times -18$	-10
$+9 \times -16$	-7
$+12 \times -12$	0