

Warm Up Grade 8

Monday, Sept. . 25



1) Evaluate. Show all steps

$$\text{a) } \frac{(-6)(+7) + (4)(-3)}{(-3)(-2)}$$

$$\begin{aligned} \text{b) } & 7[2 + (-10)] - 5(2) \\ &= \underbrace{7(-8)} - 5(2) \\ &= -56 - 5(2) \\ &= -56 - \underbrace{(10)} \\ &= (-56) + (-10) \\ &= \boxed{-66} \end{aligned}$$

2) With the following set of integers, which pair has the greatest product?

+3, -9, -7, +6

$$\begin{aligned} & (+3) \times (+6) = +18 \\ & \text{or} \\ & \boxed{(-9) \times (-7) = +63} \end{aligned}$$

multiply
positive
↓
same sign

3) Fill in the next 3 term. Write the pattern (Where does it start and how do you get the term)

$$-2, +10, -50, \underline{+250}, \underline{-1250}, \underline{+6250}$$

$x - 5 (x - 5)$

Start at (-2)
and multiply
each term by
(-5)

$$\text{a) } \frac{(-6)(+7) + (4)(-3)}{(-3)(-2)}$$

Top

$$\begin{aligned} & (-6)(+7) + (4)(-3) \\ & \underbrace{(-42)} + (4)(-3) \\ & (-42) + \checkmark (-12) \\ & -54 \end{aligned}$$

Bottom

$$\begin{aligned} & (-3)(-2) \\ & = +6 \end{aligned}$$

$$\frac{\text{Top}}{\text{Bottom}} = \frac{-54}{+6} = \boxed{-9}$$

Warm Up Grade 8

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1) Evaluate. Show all steps

$$\text{a) } \frac{(-6)(+7) + (4)(-3)}{(-3)(-2)}$$

$$\begin{aligned} \text{b) } & 7[2 + (-10)] - 5(2) \\ & = 7[-8] - 5(2) \\ & = (-56) - 5(2) \\ & = (-56) - (10) \\ & = (-56) + (-10) \\ & = -66 \end{aligned}$$

2) With the following set of integers, which pair has the greatest product?

+3, -9, -7, +6

$$\begin{aligned} (-) \times (-) & \Rightarrow + \\ \text{or} & \\ (+) \times (+) & \end{aligned}$$

$$(-9) \times (-7) = +63$$

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

3) Fill in the next 3 term. Write the pattern (Where does it start and how do you get the term)

-2, +10, -50, +250, -1250, +6250

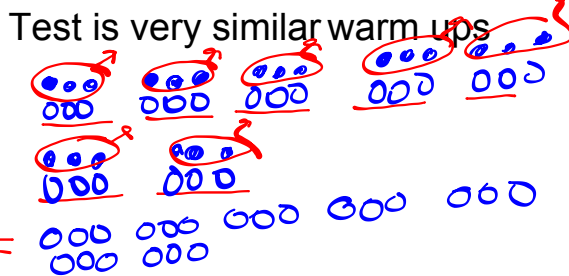
start at -2 multiply by -5

More Practice

Remove groups of (+3)

1) Model $(-7) \times (+3)$ using tiles
 $= -21$

2) Find the quotient a) $(-20) \div (-5) = +4$



b) $(+72) \div (-8) = -9$

3) Evaluate $\frac{4(-7) - (-2)}{(-3)(-4)}$

4) If Karen and Jim are playing golf and Karen has 5 holes of 1 under par and 3 holes with 2 above par and 1 hole with 2 under par. Jim's score is 4 holes 1 under par and 3 holes with 3 above par and 2 holes with 3 under par. Find each score. Who's is better?

Karen

$5(-1) + 3(+2) + 1(-2)$

$(-5) + (+6) + (-2)$

$(+1) + (-2)$

(-1)

Jim

$4(-1) + 3(+3) + 2(-3)$

$= -4 + (+9) + (-6)$

$(+5) + (-6)$

(-1)

$$\frac{4(-7) - (-2)}{(-3)(-4)}$$

Top:

$$\begin{aligned} & 4(-7) - (-2) \\ &= (-28) - (-2) \\ &= (-28) + (+2) \\ &= \boxed{-26} \end{aligned}$$

$$\begin{aligned} \text{Bottom} &= (-3)(-4) \\ &= \boxed{+12} \end{aligned}$$

$$\frac{\text{Top}}{\text{Bottom}} = \frac{(-26)}{(+12)} = -\frac{13}{6}$$

SOLUTIONS

$$\rightarrow (-13) \times (-7) = -21$$

1) Model $(-7) \times (+3)$ using tiles

take away 7 groups of +3



2) Find the quotient

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

b) $(+72) \div (-8) = -9$

3) Evaluate

$$\frac{4(-7) - (-2)}{(-3)(-4)}$$

Top

$$\frac{4(-7) - (-2)}{-28 + (+2)}$$

$$\frac{-28 + 2}{-26}$$

Bottom $(-3)(-4) + 12$

$$\frac{-26}{+12} = -\frac{13}{6}$$

4) If Karen and Jim are playing golf and Karen has 5 holes of 1 under par and 3 holes with 2 above par and 1 hole with 2 under par. Jim's score is 4 holes 1 under par and 3 holes with 3 above par and 2 holes with 3 under par. Find each score. Who's is better?

Karen

$$5(-1) + 3(+2) + 1(-2)$$

$$(-5) + (6) + (-2)$$

$$-1$$

Jim

$$4(-1) + 3(+3) + 2(-3)$$

$$(-4) + (9) + (-6)$$

$$+5 + (-6)$$

$$-1$$

$$\frac{2 + [4x(-2 \times 3) - 10]}{3 + 2(10) \div 4}$$

Top:

$$2 + [4 \times (-2 \times 3) - 10]$$

$$2 + [4 \times (-6) - 10]$$

$$2 + [(-24) - (10)]$$

$$2 + [(-24) + (-10)]$$

$$2 + [-34]$$

$$\text{Top} \Rightarrow -32$$

Bottom $\Rightarrow 3 + 2(10) \div 4$

$$= 3 + 20 \div 4$$

$$= 3 + 5$$

$$= 8$$

$$\frac{\text{Top}}{\text{Bottom}} = \frac{-32}{+8}$$

$$= \boxed{-4}$$

$$9a) \frac{(-7) \times 4 + 8}{4} = \frac{-20}{4} = -5$$

$$\begin{array}{r} (-7) \times 4 + 8 \\ -28 + 8 \\ -20 \end{array}$$

$$b) \frac{4 + (-36) \div 4}{-5} = \frac{-5}{-5} = 1$$

$$\begin{array}{r} 4 + (-36) \div 4 \\ 4 + (-9) \\ -5 \end{array}$$

$$c) \frac{-32}{(-6)(-2) - (-4)} = \frac{-32}{+16} = -2$$

$$\begin{array}{r} (-6)(-2) - (-4) \\ +12 + (+4) \\ +16 \end{array}$$

$$d) \frac{9}{(-3) + (-18) \div 3} = \frac{9}{-9} = -1$$

$$\begin{array}{r} (-3) + (-18) \div 3 \\ -3 + (-6) \\ -9 \end{array}$$

$$10. \frac{4(-3) + 7(-4)}{5(-1)} = \frac{-40}{-5}$$

$$\begin{array}{r} 4(-3) + 7(-4) = +8 \\ -12 + -28 \\ -40 \end{array}$$

HI

$$b) \frac{[19 - (-5)] \div (-3)}{2(-2)}$$

$$= \frac{-8}{-4}$$

$$\begin{array}{r} [19 - (-5)] \div (-3) \\ (19 + (+5)) \div -3 \\ +24 \div -3 = -8 \end{array}$$

+2

$$c) \frac{32 \div 4 - (-28) \div (+7)}{12 \div (-4)}$$

$$= \frac{+12}{-3}$$

$$\begin{array}{r} 32 \div 4 - (-28) \div 7 \\ 8 - (-4) \\ 8 + (+4) \\ +12 \end{array}$$

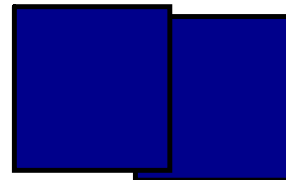
$$= -4$$

$$d) \frac{12 - 4(-6)}{[3 - (-3)] \times (-3)}$$

$$= \frac{+36}{-18} = -2$$

$$\begin{array}{r} 12 - 4(-6) \\ 12 - (-24) \\ 12 + (+24) \\ +36 \end{array}$$

$$\begin{array}{r} [3 - (-3)] \times -3 \\ (3 + (+3)) \times (-3) \\ 6 \times -3 \\ -18 \end{array}$$



$$11. (-40) - 2[-8 \div 2]$$

$$-40 - 2 \times (-4)$$

$$-40 - (-8)$$

$$-40 + (+8)$$

$$-32$$

Robert was correct

$$12. \underline{(-20)} \div 2 - (-2)$$

$$-10 - (-2)$$

$$-10 + (+2)$$

$$-8$$

$$(-20) \div [2 - (-2)]$$

$$-20 \div (2 + 2)$$

$$-20 \div +4$$

$$-5$$

$$b) -21 + 6 \div 3$$

$$-21 + 2$$

$$-19$$

$$(-21 + 6) \div 3$$

$$-15 \div 3$$

$$-5$$

$$c) 10 + 3 \times 2 - 7$$

$$10 + 6 - 7$$

$$9$$

$$10 + 3 \times (2 - 7)$$

$$10 + 3 \times -5$$

$$10 + (-15)$$

$$-5$$

$$13. \quad 405 - 4 \times 45 \quad 405 + 4(-45) \checkmark$$

$$405 - 180$$

$$225$$

She has \$225 in her account.

$$15 \quad \frac{(-2) + (+5) + (-8) + (-4) + (-11) + (-10) + (-5)}{7}$$

$$\frac{-35}{7} = -5$$

$$17. a) (-10) \boxed{\times} (-2) \boxed{+} 1 = 21$$

$$b) (-5) \boxed{-} (-2) \boxed{+} 4 = 1$$

$$c) 6 \boxed{\times} (-7) \boxed{-} 2 = -44$$

$$d) (-2)(-2) \boxed{-} 8 = -4$$

Class/Homework

Page 97

Tiles

#2(a,b...MODEL), #3, #4(just the sign),

#5(a,c,d....show work for c,d using distributive property),

Box

#6(a,b,c,d), #7, 8

Page 97-98

#9(a,c...no tiles), #11a, #13a, #16, #20, #21, #22, #23

Extra Practice 5



Test tomorrow

All solutions to tonight's homework will be posted on line in this VERY lesson

pg 97

$$1. (+2) \times (-1)$$

$$(-1) + (-1) = -2$$

-1

-1

$$b) (+2) \times (+9)$$

$$(+9) + (+9) = +18$$

1	1	1	1	1	1	1	1	1
---	---	---	---	---	---	---	---	---

1	1	1	1	1	1	1	1	1
---	---	---	---	---	---	---	---	---

$$c) (+3) \times (-3)$$

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

-1	-1	-1
----	----	----

-1	-1	-1
----	----	----

-1	-1	-1
----	----	----

$$d) (+3) \times (+7)$$

$$(+7) + (+7) + (+7)$$

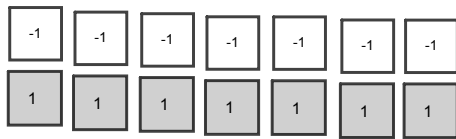
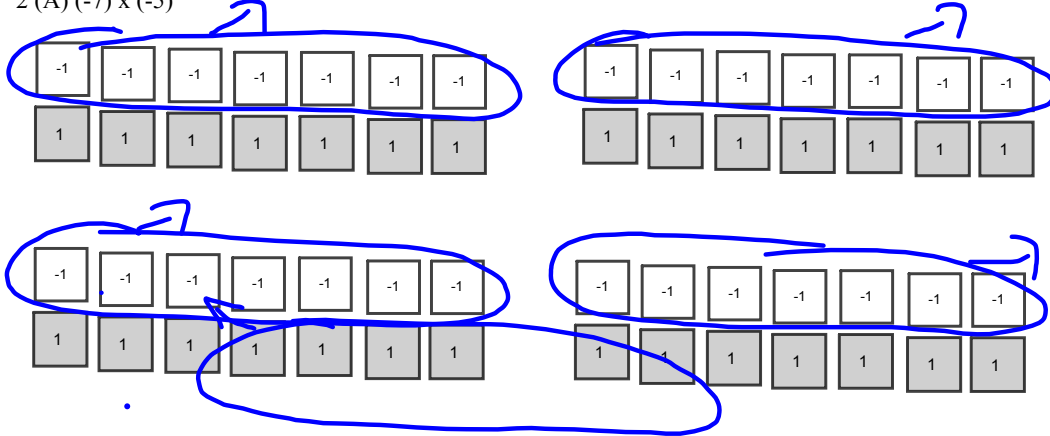
1	1	1	1	1	1	1
---	---	---	---	---	---	---

1	1	1	1	1	1	1
---	---	---	---	---	---	---

1	1	1	1	1	1	1
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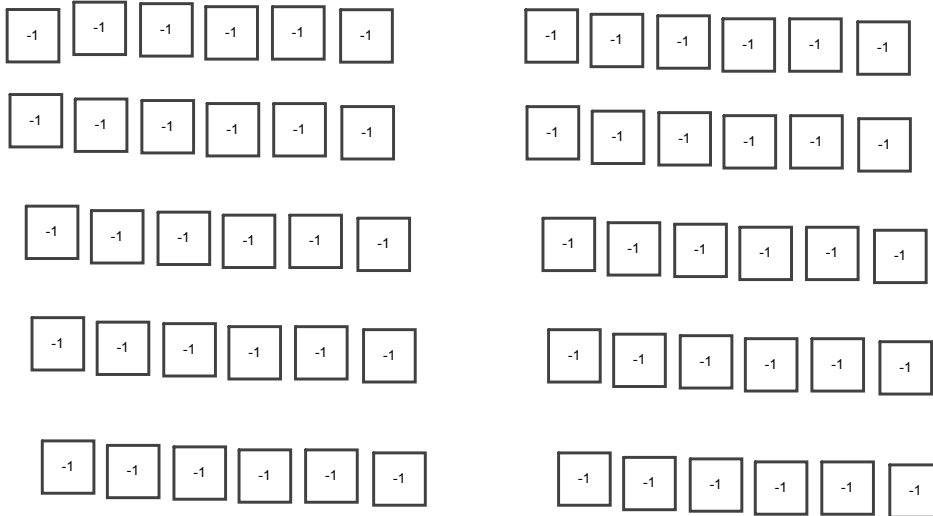
PG 97
 2. $(-7) \times (-5)$

2 (A) $(-7) \times (-5)$

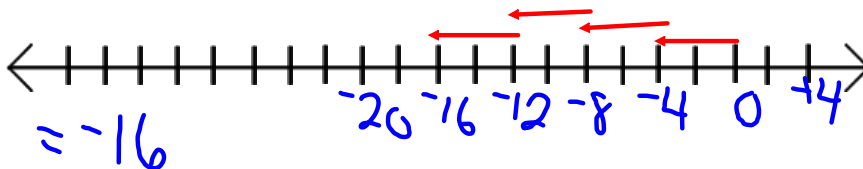


Take away 5 groups of -7

b) $(+10) \times (-6)$
 10 groups of -6



c) $-4 \times (+4)$



d) $(+6) \times (+8)$
 8 groups of 6 positives
 $= +48$

3. 4 hours \rightarrow 8 half hours

$$\text{Temp change} \rightarrow 8 \times (-2) \\ -16$$

$$\text{Temp after} \quad +6 + (-16) \\ \text{4 hours} \quad -10$$

4. a) $(+25) \times (-31)$
neg

b) $(-13) \times (-15)$
pos.

c) $(-11) \times (+12)$
neg

d) $(+9) \times (+13)$
pos

5. a) $(+9) \times (-7)$
 -63

b) $(+4) \times (+7)$
 $+28$

40
20 40×20
2 2×40

c) $(-11) \times (+13)$

10	1
10×10	10×1
100	10
3	3
3×10	3×1
30	3

$11 \times 12 = 132$
so $11 \times 13 = 143$
 -143

d) $(-40) \times (-22)$

$4 \times 22 = 88$
 $40 \times 22 = 880$
 $+880$

e) $(-1) \times (+17)$
 -17

f) -37×0
 0

$$\begin{aligned} & (-32) \times (+15) \\ & \overset{\text{Ignore sign}}{[-30 + (-2)]} \times (+10 + +5) \\ & [(-30) \times (+10)] + (-30) \times (+5) + (-2) \times (+10) + (-2) \times (+5) \end{aligned}$$

$$\begin{aligned} & (-32) \times (+15) \\ & \text{Ignore sign} \\ & = (10 \times 30) + (10 \times 2) + (5 \times 30) + (2 \times 5) \\ & = 300 + 20 + 150 + 10 \\ & = 480 \end{aligned}$$

	30	2
10	$10 \times 30 = 300$	$10 \times 2 = 20$
5	$5 \times 30 = 150$	$2 \times 5 = 10$

$$(-32) \times (15) = -480$$

$$6. a) (-12) \times \underline{\quad} = +72$$

-6

$$b) \underline{\quad} \times (+8) = +80$$

+10

$$c) +7 \times \underline{\quad} = 0$$

0

$$d) \underline{\quad} \times (-4) = -60$$

+15

$$7 a) (-55) \times 6$$

$$55 \times 6$$

$$50 \times 6 = 300$$

$$5 \times 6 = 30$$

$$55 \times 6 = 330$$

-330 ml of water

$$8) (+5) \times (-7)$$

I have 5 friends that I owe \$7 each to.
How much do I owe?

Review for Test

Be able to multiply and divide integers, using;

- models (Tiles)
- number lines (only multiplication on test tomorrow)
- rules for multiplying and dividing

Be able to add and subtract integers using rules

Be able to recognize using models and number lines to add and subtract integers.

Be able to apply the rules for adding, subtracting, multiplying and dividing integers with order of operations. (BEDMAS)

10 MC

7 Short Response

- *Model multiplication with tiles
- *Similar to any warmup (find the pattern, what two number produce largest product or smallest product)
- *similar to today's review (Especially word problem)
- *Multiply using distributive property Ex) $(-21) \times (+15)$ No calculators
- * Evaluate multiplication and division
- *BEDMAS

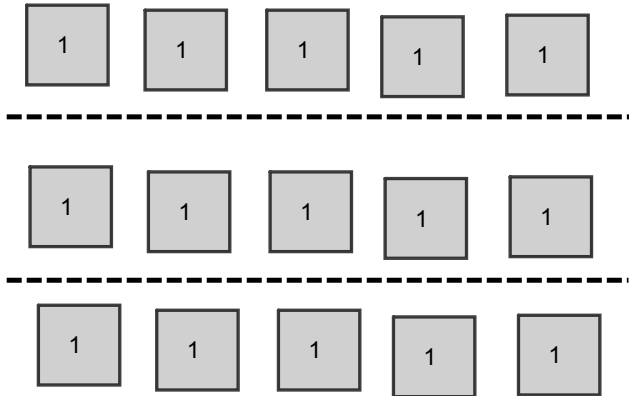
Model Using a number line

$$(+2) \times (+3) = \underline{\quad} \textcircled{1}$$

①

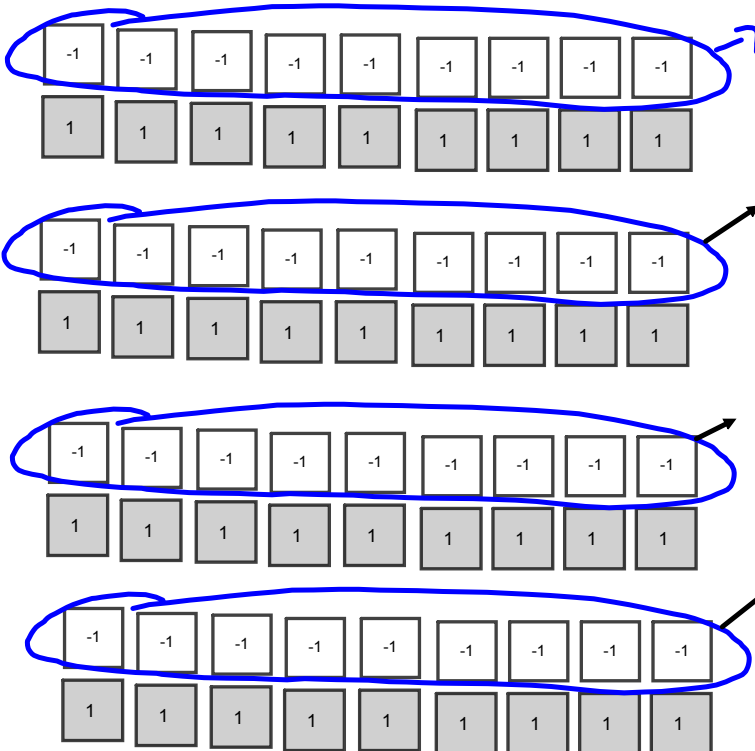
,

9. $(+15) \div (+3)$



9 (b) $(+36) \div (-9)$

rewrite $(\underline{\quad}) \times (-9) = (+36)$



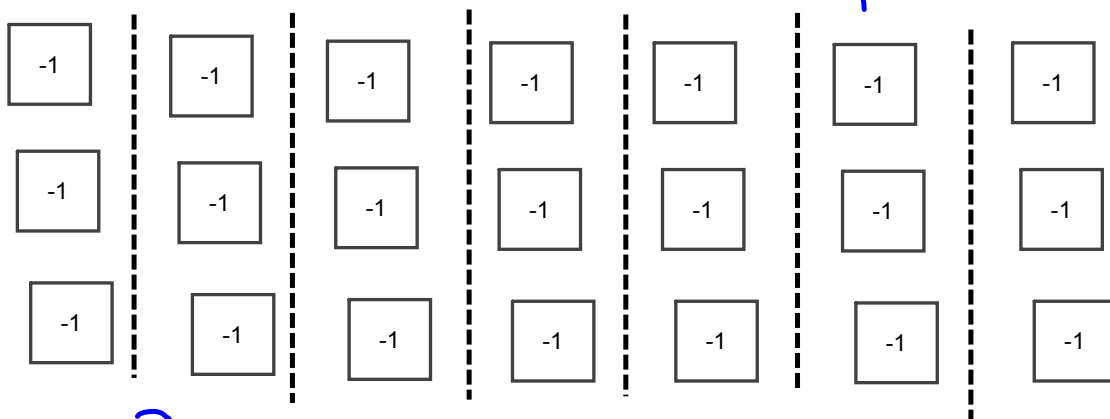
Take away
4 groups of -9

$+36 \div (-9) = -4$



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

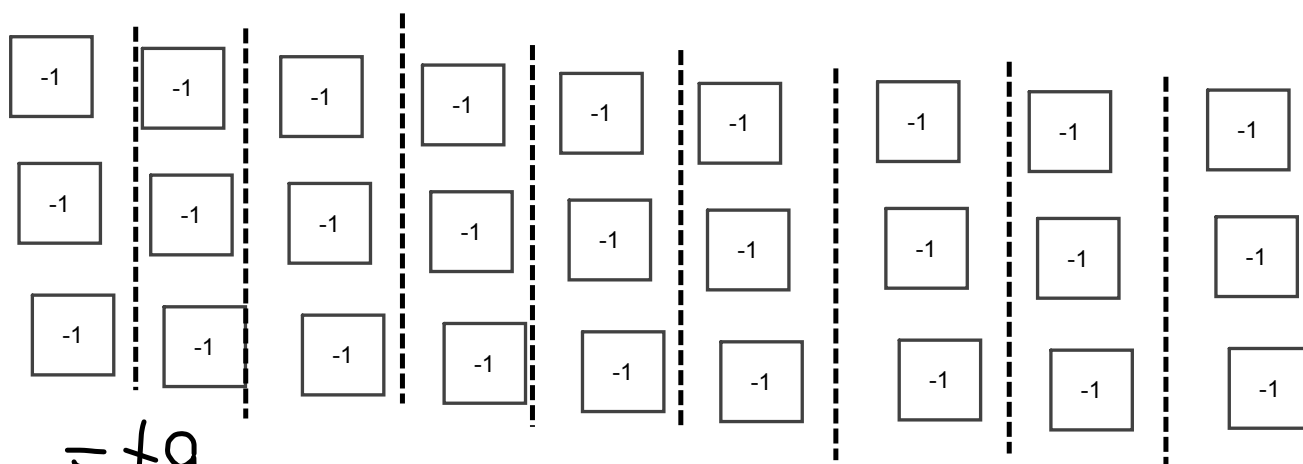
Divide -21 into 7 groups



$$= -3$$

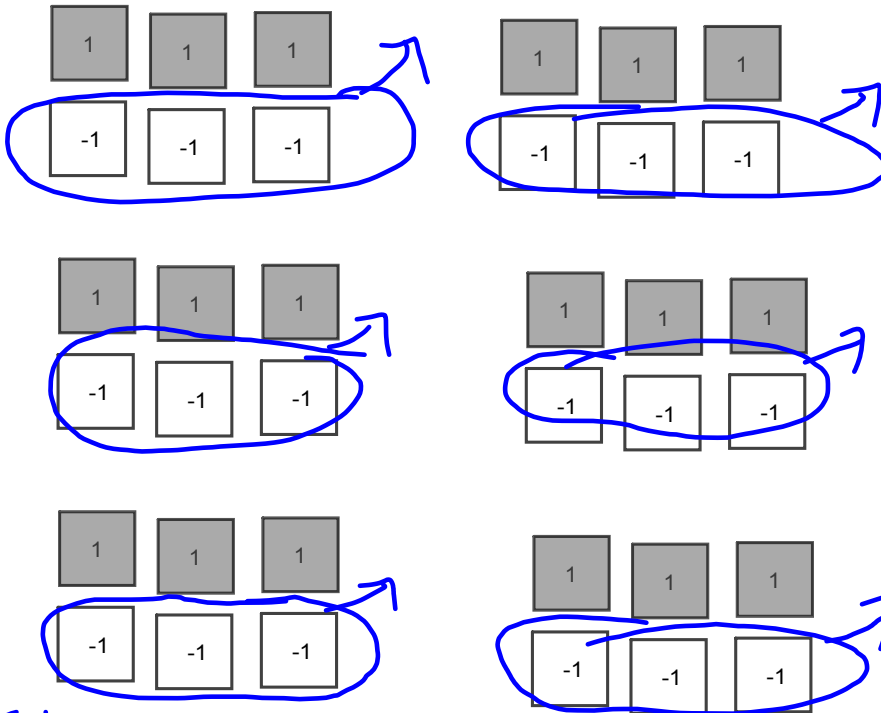
$$d) (-27) \div (-3)$$

-27 divided into groups of -3



$$= +9$$

$$10. a) (+18) \div (-3)$$



Take away 6 groups of -3
(-6)

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

$$b) (+14) \div (+2) = +7$$

Divide 14 into 2 groups of +7

$$c) (-28) \div (+4)$$

Divide 28 negatives into 4 equal groups. Each group will have -7

$$d) (-30) \div (-6)$$

Divide -30 into 5 groups of -6

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

$$11. (-65) \div (-5) = +13$$

In 13 weeks Tyler will have
withdraw \$65

b) withdraw is a neg.

$$12 a) (+26) \div (-2) = -13$$

$$b) (-32) \div (-8) = +4$$

$$c) (-1) \div (+1) = -1$$

$$d) (+42) \div (+7) = +6$$

Explain
how to
divide into
groups.
→ or tell
rules

$$13. a) (-56) \div (-7) \\ = +8$$

$$b) (+40) \div (-5) \\ = -8$$

$$c) (-88) \div (+8) \\ = -11$$

$$d) (+28) \div (+2) \\ = +14$$

$$14 a) \frac{-18}{-2} = +9$$

$$b) \frac{+16}{-4} = -4$$

$$c) \frac{-18}{+6} = -3$$

$$d) \frac{0}{-9} = 0$$

$$15. a) (+24) \div (-12) \\ = -2$$

$$b) (-63) \div (+21) \\ = -3$$

$$c) (+75) \div (+15) \\ = +5$$

$$d) (-99) \div (-11) \\ = +9$$

$$16. (-63) \div (-3) = +21$$

She removed candies for 21 days.

$$17. (+72) \div (-9)$$

I had \$72 and I withdraw \$9 each week. How long ago did I have \$72.

$$18. \begin{aligned} -21 \div -1 &= +21 \\ -21 \div -3 &= +7 \\ -21 \div -7 &= +3 \\ -21 \div -21 &= +1 \end{aligned}$$

$$\begin{aligned} -21 \div +1 &= -21 \\ -21 \div +3 &= -7 \\ -21 \div +7 &= -3 \\ -21 \div +21 &= -1 \end{aligned}$$

$$19. a) \begin{aligned} 4 - 6(-2) \\ 4 - (-12) \\ 4 + (+12) \\ +16 \end{aligned}$$

$$b) \begin{aligned} (-18) - (-9) - 3 \\ +2 + (-3) \\ -1 \end{aligned}$$

$$c) \begin{aligned} [7 - (-3)] \div 5 \\ [7 + 3] \div 5 \\ 10 \div 5 \\ 2 \end{aligned}$$

$$d) \begin{aligned} 4(-6) \div (-2) \\ -24 \div (-2) \\ +12 \end{aligned}$$

$$21) a) \begin{aligned} (-8) \div (-4) + 6(-3) \\ = (-2) + 6(-3) \\ = (-2) + (-18) \\ = -20 \end{aligned}$$

$$21) b) \begin{aligned} (-5) + (-12) \div (-3) \\ = (-5) + (+4) \\ = (-1) \end{aligned}$$

$$21) c) \begin{aligned} 18 + 3[10 \div (-5)] \\ = 18 + 3(-2) \\ = 18 + (-6) \\ = +12 \end{aligned}$$

$$21) d) \begin{aligned} (-16) \div 8[7 - (-2)] \\ = (-16) \div 8[7 + (+2)] \\ = (-16) \div 8[9] \\ = (-2) [9] \\ = -18 \end{aligned}$$

$$22) a) \begin{aligned} \frac{3(-6) - 3}{-7} \\ = \frac{(-18) - 3}{-7} \\ = \frac{(-18) + (-3)}{-7} \\ = \frac{-21}{-7} \\ = +3 \end{aligned}$$

$$b) \begin{aligned} \frac{(-4) + [(-7) - (-2)]}{3} \\ = \frac{(-4) + [(-7) + (+2)]}{3} \\ = \frac{(-4) + [(-5)]}{3} \\ = \frac{(-9)}{3} \\ = -3 \end{aligned}$$

$$c) \begin{aligned} \frac{20}{(-3) + (-14) \div 7} \\ = \frac{20}{(-3) + (-2)} \\ = \frac{20}{(-5)} \\ = -4 \end{aligned}$$

24. Corey

$$\begin{aligned} & 3 \times (+2) + 3 \times (-3) + 4 \times (+1) \\ & + 6 + (-9) + (+4) \\ & + 1 \end{aligned}$$

Suzanne

$$\begin{aligned} & 4 \times (+2) + 4 \times (-3) + 2 \times (+1) \\ & + 8 + (-12) + (+2) \\ & - 2 \end{aligned}$$

Corey won since $+1 > -2$.

Extra Practice 5 *Homework Solutions for Friday's Class*

Master 2.22

SHOW ALL WORK ON YOUR OWN PAPER

Lesson 2.5: Order of Operations with Integers

1. Evaluate. State which operation you do first.

$$\begin{aligned} \text{a) } & 8 \times 5 - 4 \\ & = 40 - 4 \\ & = 36 \end{aligned}$$

$$\begin{aligned} \text{b) } & (-4)[(-4) + 9] \\ & (-4) (+5) \\ & -20 \end{aligned}$$

$$\begin{aligned} \text{c) } & 18 \div [(-7) - 2] \\ & = 18 \div [(-7) + (-2)] \\ & = 18 \div (-9) \\ & = -2 \end{aligned}$$

$$\begin{aligned} \text{d) } & (-3) + (-14) \div (-2) \\ & = (-3) + (+7) \\ & = +4 \end{aligned}$$

2. Evaluate. Show all steps.

$$\begin{aligned} \text{a) } & 4(-8) - 9 \\ & = (-24) - 9 \\ & = (-24) + (-9) \\ & = -32 \end{aligned}$$

$$\begin{aligned} \text{b) } & (-1) + (-20) \div 5 \\ & = (-1) + (-4) \\ & = -5 \end{aligned}$$

$$\begin{aligned} \text{c) } & (-9) + (-4)(-2) \\ & = (-9) + (+8) \\ & = -1 \end{aligned}$$

$$\begin{aligned} \text{d) } & (-3)[(-8) - 11] \\ & = (-3)[(-8) + (-11)] \\ & = (-3)[(-19)] \\ & = +57 \end{aligned}$$

3. Evaluate.

$$\begin{aligned} \text{a) } & \frac{(-5) + (-9)}{2} = \frac{(-14)}{2} \\ & = -7 \end{aligned}$$

$$\begin{aligned} \text{b) } & \frac{-12}{(-2)(-3)} = \frac{-12}{(+6)} \\ & = -2 \end{aligned}$$

$$\begin{aligned} \text{c) } & \frac{24 \div (-6) - 1}{-5} \\ & = \frac{(-4) - 1}{-5} \\ & = \frac{-5}{-5} \\ & = +1 \end{aligned}$$

$$\begin{aligned} \text{d) } & \frac{36}{(-5) \times 2 + 4} \\ & = \frac{36}{(-10) + 4} \\ & = \frac{36}{(-6)} \\ & = -6 \end{aligned}$$

Homework Solutions for Friday's Class

4. Evaluate.

$$\begin{aligned} \text{a) } & (-72) \div 9 + 4 \times (-3) \\ & (-8) + 4 \times (-3) \\ & (-8) + (-12) \\ & -20 \end{aligned}$$

$$\begin{aligned} \text{b) } & 5(-2) - 63 \div (-7) \\ & = (-10) - 63 \div (-7) \\ & = (-10) - (-9) \\ & = (-10) + (+9) \\ & = -1 \end{aligned}$$

$$\text{c) } \frac{4(-5) + [28 \div (-4)]}{5 \times (-2) + 1}$$

$$= \frac{4(-5) + [-7]}{(-10) + 1}$$

$$= \frac{-20 + [-7]}{(-10) + 1}$$

$$= \frac{-27}{-9}$$

$$= +3$$

$$\text{d) } \frac{4 \times (-4) + (-8)}{[10 + (-1)] + [2 \times (-3)]}$$

$$= \frac{(-16) + (-8)}{[(+9)] + [(-6)]}$$

$$= \frac{(-24)}{(+3)}$$

$$= -8$$

Attachments

Extra Practice 5 Orderof Operations (Integers).pdf