

Warm Up Grade 8



1) Evaluate. Show all steps

a) 
$$\frac{(-6)(+7) + (4)(-3)}{(-3)(-2)}$$
 Top  
 Bottom  $\Rightarrow$  +6

Top  

$$\begin{array}{r} (-6)(+7) + (4)(-3) \\ (-42) + (-12) \\ -54 \end{array}$$
 } Top  $\div$  Bottom  

$$(-54) \div (+6)$$
  
-9

b)  $7[2 + (-10)] - 5(2)$

$$\begin{array}{r} 7(-8) - 5(2) \\ (-56) - 5(2) \\ (-56) - (10) \\ \downarrow \quad \downarrow \\ (-56) + (-10) \\ \hline -66 \end{array}$$

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  
↻ multiply by -5

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

+3, -9, -7, +6

$(+3)(+6) = (+18)$   
 $(-9)(-7) = (+63)$

$\downarrow$  positive  $\downarrow$  multiply  
 $(-)(-)$   
 or  
 $(+)(+)$

**More Practice**

Test is very similar warm ups

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

2) Find the quotient a)  $(-20) \div (-5) = +4$       b)  $(+72) \div (-8) = -9$

3) Evaluate **Top**  $4(-7) - (-2)$       **Bottom**  $(-3)(-4) \Rightarrow +12$

$4(-7) - (-2) = (-28) - (-2) = (-28) + (+2) = -26$

$\frac{-26}{+12}$

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**

$$\begin{array}{r} 5 \rightarrow (-1) \\ 3 \rightarrow (+2) \\ 1 \rightarrow (-2) \end{array}$$

**Jim**

$$\begin{array}{r} 4 \rightarrow (-1) \\ 3 \rightarrow (+3) \\ 2 \rightarrow (-3) \end{array}$$

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

$$\underline{(-5)} + \underline{(+6)} + \underline{(-2)}$$

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

$$(-1)$$

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

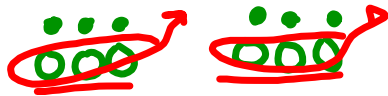
$$\underline{(-4)} + \underline{(+9)} + \underline{(-6)}$$

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

$$(-1)$$

**Tie**

Model  $(-2) \times (-3) = (+6)$  Need zero pairs

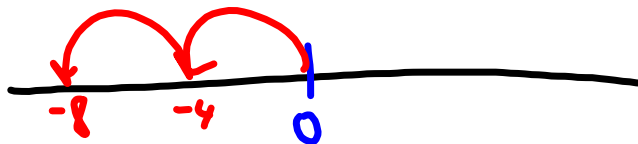


= ... ..

Model # line

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

2 Jumps of size (-4)



# SOLUTIONS

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

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

take away 7 groups of +3



2) Find the quotient a)  $(-20) \div (-5)$       b)  $(+72) \div (-8)$

$$= +4$$

$$= -9$$

3) Evaluate

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

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

Top  $4(-7) - (-2)$   
 $-28 + (+2)$   
 $-26$

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

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

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

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

$$+5 + (-6)$$

$$-1$$

$$\frac{2 + [4x(-2x3) - 10]}{3 + 2(10) \div 4}$$

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

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

-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
----	----	----

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

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

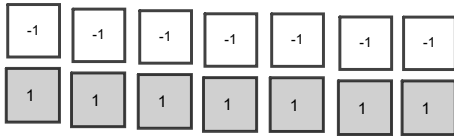
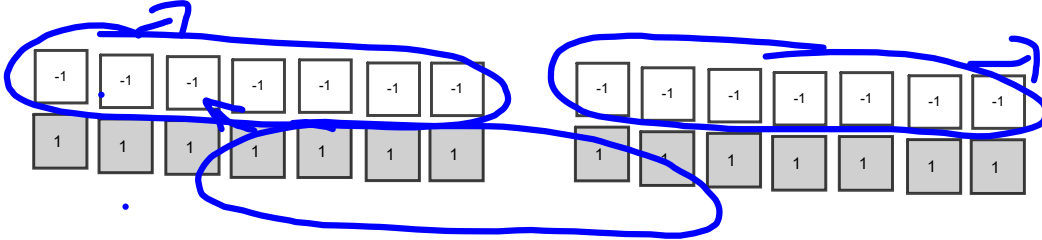
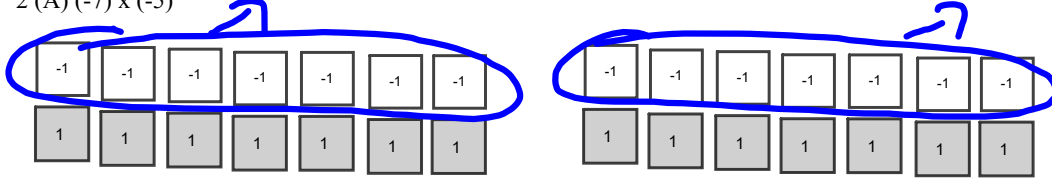
1	1	1	1	1	1	1
---	---	---	---	---	---	---

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

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

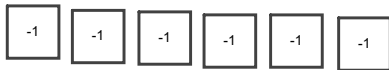
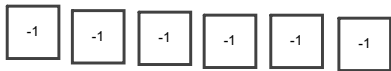
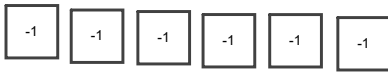
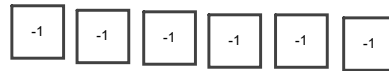
2.  $(-7) \times (-5)$

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

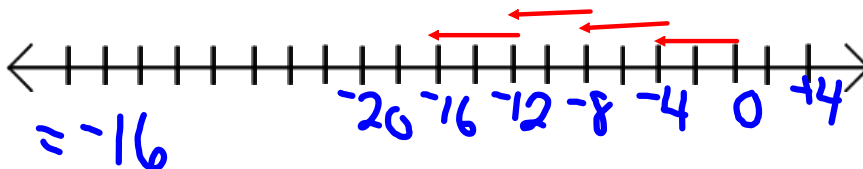


Take away 5 groups of -7

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 $40 \times 20$
2 $2 \times 40$

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

10	1
10 $10 \times 10$	10
3 $3 \times 10$	3 $3 \times 1$
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)  $-37 \times 0$   
 $0$



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

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

	30	2
10	10x30 = 300	10x2 = 20
5	5x30 = 150	2x5 = 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.

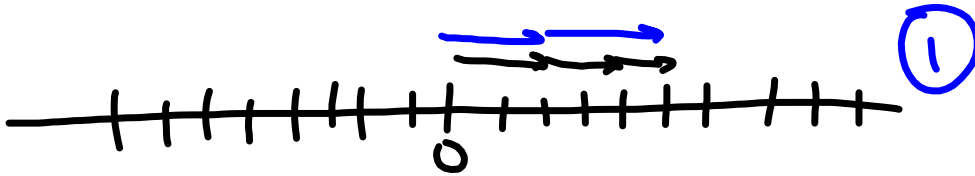
Be able to apply the rules for adding, subtracting, multiplying and dividing integers with order of operations. (BEDMAS)

10 MC

7 Short Response

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

$$(+2) \times (+3) = \underline{+6} \text{ (1)}$$



# Class/Homework

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Answers  
Pg 503 Top

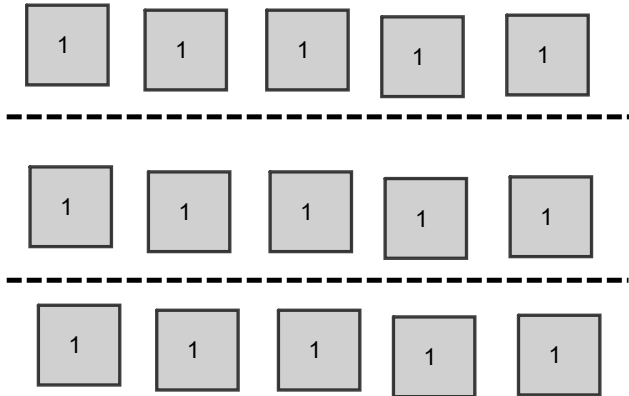
#9(a,c...no tiles), #11a, #13a, #16, #20, #21, #22, #23

Pg 99 Practice test → Answers on Pg 503

Test tomorrow

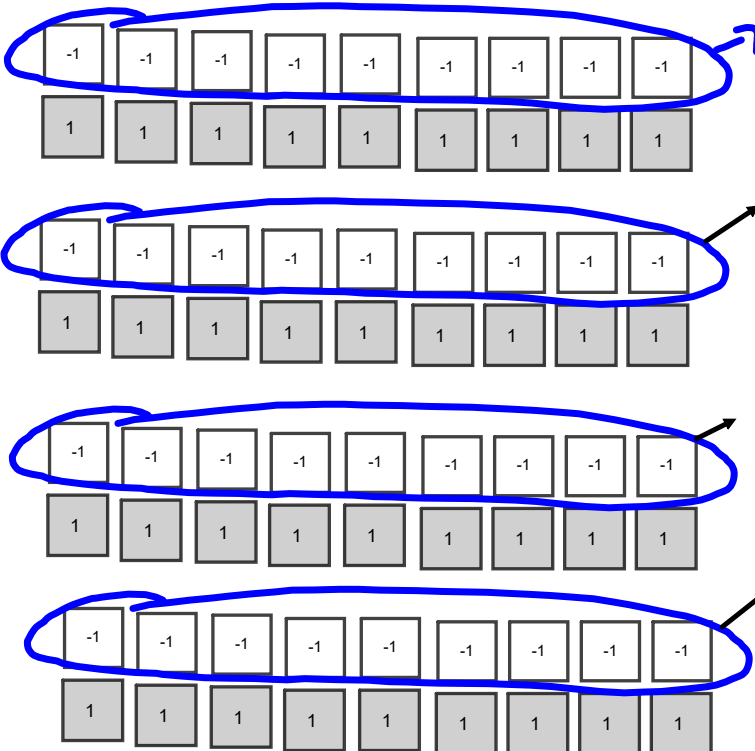
All solutions to tonight's homework will be posted on line in this VERY lesson

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



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

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



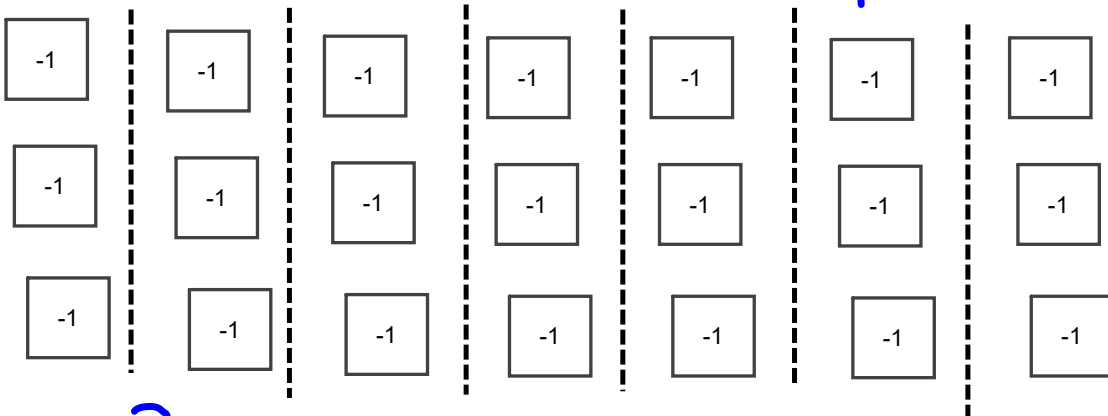
Take away  
4 groups of -9

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



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

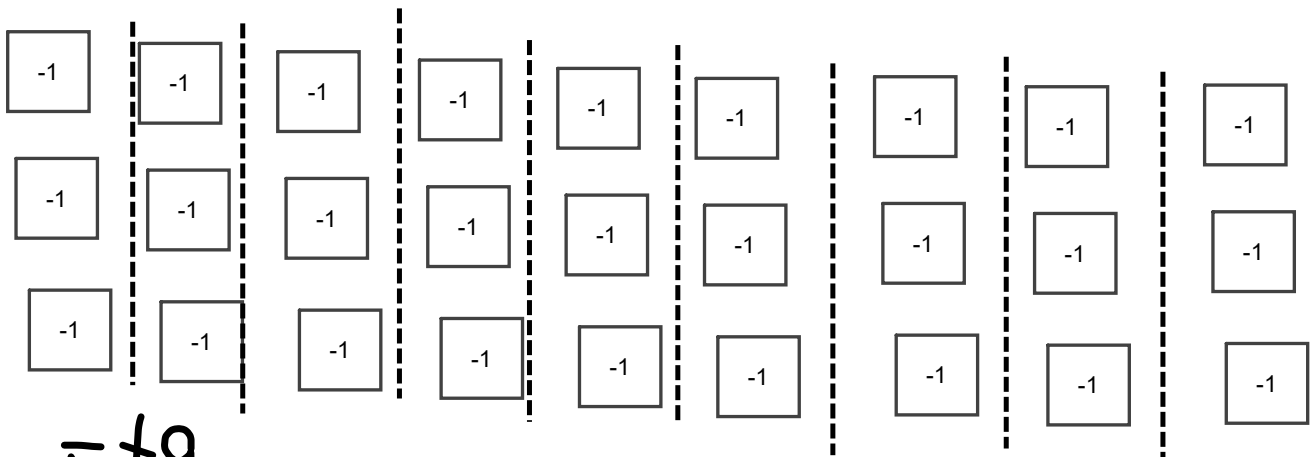
Divide -21 into 7 groups



$$= -3$$

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

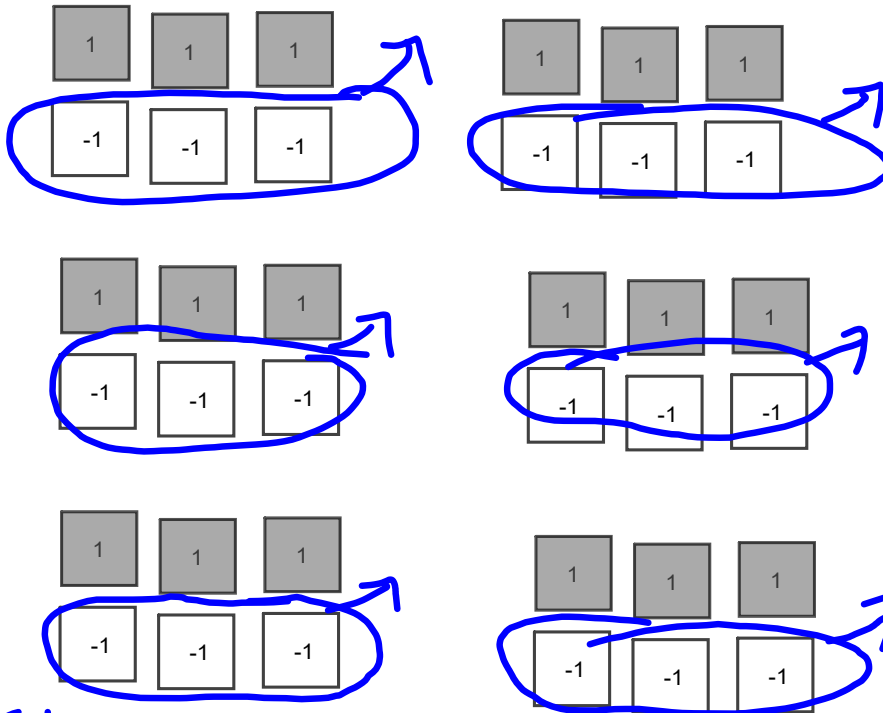
-27 divided into groups of -3



$$= +9$$



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



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.

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

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

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

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

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

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

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

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

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

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

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

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

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

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  $+1 > -2$ .