



## WARM UP GRADE 8

*Tuesday, Sept. 27*

### Section 2.5 Order of Operations with Integers continued



Evaluate: (MUST SHOW WORK)

$$\begin{array}{l} \text{Top} \\ \text{Bottom} \end{array} \frac{4 - [18 - (-4)] \times (-2)}{2 \times (-3)} \quad \frac{+48}{-6} = \boxed{-8} \quad \text{Final}$$

$$\begin{array}{l} \text{Top} \\ \text{Bottom} \end{array} \begin{array}{l} 4 - [18 - (-4)] \times (-2) \\ 4 - [18 + (+4)] \times (-2) \\ 4 - (+22) \times (-2) \\ 4 - (-44) \\ 4 + (+44) \\ \boxed{+48} \end{array} \quad \begin{array}{l} \text{Bottom} \\ 2 \times (-3) \\ = -6 \end{array}$$

*Homework Solutions for Thursday Night Page 92 #3 to #7*

3a)  $7 + \underline{(-1) \times (-3)}$

4.

$$\begin{array}{r} 7 + 3 \\ 10 \end{array}$$

b)  $\underline{(-18) \div (-6)} - (-4)$

$$\begin{array}{r} +3 + (+4) \\ +7 \end{array}$$

c)  $\underline{6 + (-4)} - (-2)$

$$\begin{array}{r} 2 + (+2) \\ +4 \end{array}$$

d)  $(-2) \underline{[7 + (-5)]}$

$$\begin{array}{r} (-2) \times (+2) \\ -4 \end{array}$$

e)  $\underline{(-3) \times (-4)} \div (-1)$

$$\begin{array}{r} +12 \div (-1) \\ -12 \end{array}$$

f)  $8 - 3 + \underline{(-4) \div (-1)}$

$$\begin{array}{r} 8 - 3 + 4 \\ \underline{5} + 4 \end{array}$$

$$9$$

$$5 \quad 3 - (-5) + \underline{8(-4)}$$

*Homework Solutions for Thursday Night Page 92 #3 to #7*

- do mult. first

$$\underline{3 - (-5)} + (-32)$$

- do sub $\bar{t}$

$$3 + (+5) + (-32)$$

$$-24$$

Elijah added before subtracting which was where he made his mistake.

$$6a) \quad 12 \div \underline{(2 \times 3)} - 2$$

$$12 \div 6 - 2$$

$$2 - 2$$

$$0$$

$$b) \quad 12 \div 2 \times \underline{(3 - 2)}$$

$$12 \div 2 \times 1$$

$$6 \times 1$$

$$6$$

$$7a) \quad \underline{7(4)} - 5$$

$$28 - 5$$

$$23$$

$$b) \quad 6 \underline{[2 + (-5)]}$$

$$6 \times (-3)$$

$$-18$$

$$c) \quad (-3) + \underline{4(-7)}$$

$$(-3) + (-28)$$

$$-31$$

$$d) \quad (-6) + \underline{4(-2)}$$

$$-6 + (-8)$$

$$-14$$

$$e) \quad 15 \div \underline{[10 \div (-2)]}$$

$$15 \div (-5)$$

$$-3$$

$$f) \quad \underline{18 \div 2} (-6)$$

$$9 \times (-6)$$

$$-54$$

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$$8a) 6(5-7) - 3$$

$$6 \times (5 + (-7)) - 3$$

$$6 \times (-2) - 3$$

$$-12 + (-3)$$

$$-15$$

$$b) 4 - [5 + (-11)]$$

$$4 - (-6)$$

$$4 + (+6)$$

$$+10$$

$$c) [4 - (-8)] \div 6$$

$$[4 + (+8)] \div 6$$

$$12 \div 6$$

$$2$$

$$d) 8 - 66 \div (-11)$$

$$8 - (-6)$$

$$8 + (+6)$$

$$+14$$

$$e) (-24) \div 12 + (-3)(-4)$$

$$(-2) + (+12)$$

$$+10$$

$$f) 6(-3) + (-8)(-4)$$

$$-18 + (+32)$$

$$+14$$

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

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

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

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

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

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

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

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

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

$$4(-3) + 7(-4) = +8$$

$$-12 + -28$$

$$-40$$

$$b) \frac{[19 - (-5)] \div (-3)}{2(-2)} = \frac{-8}{-4}$$

$$+2$$

$$[19 - (-5)] \div (-3)$$

$$(19 + (+5)) \div -3$$

$$+24 \div -3 = -8$$

$$c) \frac{32 \div 4 - (-28) \div (-7)}{12 \div (-4)} = \frac{+12}{-3}$$

$$32 \div 4 - (-28) \div 7$$

$$8 - (-4)$$

$$8 + (+4)$$

$$+12$$

$$= -4$$

$$d) \frac{12 - 4(-6)}{[3 - (-3)] \times (-3)} = \frac{+36}{-18}$$

$$= -2$$

$$12 - 4(-6)$$

$$12 - (-24)$$

$$12 + (+24)$$

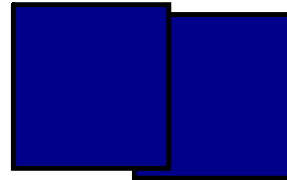
$$+36$$

$$[3 - (-3)] \times 3$$

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

$$6 \times -3$$

$$-18$$



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

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

$$-40 - (-8)$$

$$-40 + (+8)$$

$$-32$$

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.

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

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

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

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

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

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



## SHEET

## Grade 8 Unit 2 Integers

## Homework Solutions for Friday's Class

## Order of Operations (Extra Practice)

Evaluate each expression.

$$\begin{aligned} 1) & 10 \div (4 - 2) \\ & = 10 \div (2) \\ & = 5 \end{aligned}$$

$$\begin{aligned} 3) & (1 - 5) \div -2 \\ & = -4 \div -2 \\ & = (+2) \end{aligned}$$

$$\begin{aligned} 5) & -16 \div (-1 - 3) \\ & = -16 \div (-4) \\ & = (+4) \end{aligned}$$

$$\begin{aligned} 7) & (-12 \times 2) \div 6 \\ & = (-24) \div 6 \\ & = (-4) \end{aligned}$$

$$\begin{aligned} 9) & -6 + -5 - -1 \\ & = -6 + (-5) + (+1) \\ & = (-11) + (+1) \\ & = (-10) \end{aligned}$$

$$\begin{aligned} 13) & 2 + 4 \times 5 + 6 \\ & = 2 + (20) + 6 \\ & = 22 + 6 \\ & = 28 \end{aligned}$$

$$\begin{aligned} 2) & -16 \div (3 - -1) \\ & = -16 \div (3 + +1) \\ & = -16 \div (+4) \\ & = -4 \end{aligned}$$

$$\begin{aligned} & (-6) + (-4) \\ 4) & (-6 - 4) \div 2 \\ & = (-10) \div 2 \\ & = (-5) \end{aligned}$$

$$\begin{aligned} 6) & 4 - 15 \div -3 \\ & = 4 + 5 \quad \text{or} \quad = 4 - (-5) \\ & = 9 \quad \quad \quad = 4 + 5 \end{aligned}$$

$$\begin{aligned} 8) & -6 \div -2 + 2 \\ & = +3 + 2 \\ & = (+5) \end{aligned}$$

$$\begin{aligned} 10) & 4 \times -15 \div 5 \\ & = (-60) \div 5 \\ & = (-12) \end{aligned}$$

$$\begin{aligned} 14) & 12 \div 4 + 6 \div 2 \\ & = 3 + 6 \div 2 \\ & = 3 + 3 \\ & = 6 \end{aligned}$$

11)  $6 + 6 \times 2 + 6$

$6 + 12 + 6$

$18 + 6$

$24$

*Homework Solutions for Friday's Class*

12)  $5 - (4 - (3 - 2))$

$= 5 - (4 - (1))$

$= 5 - (3)$

$= 2$

*Homework Solutions for Friday's Class*

$$\begin{aligned}
 15) & (5 - (2 + 2)) \times 3 \\
 & = (5 - (4)) \times 3 \\
 & = (+1) \times 3 \\
 & = 3
 \end{aligned}$$

$$\begin{aligned}
 16) & 5(16 \div 4 + 18 \div 3) \\
 & = 5(4 + 18 \div 3) \\
 & = 5(4 + 6) \\
 & = 5(10) \\
 & = 50
 \end{aligned}$$

$$\begin{aligned}
 17) & 8 + 4 + 5 - 2 - 1 \\
 & = 2 + 5 - 2 - 1 \\
 & = 7 - 2 - 1 \\
 & = 5 - 1 \\
 & = 4
 \end{aligned}$$

$$\begin{aligned}
 18) & 5 - 2 + (5 - (5 - 2)) \\
 & = 5 - 2 + (5 - (3)) \\
 & = 5 - 2 + (2) \\
 & = 5 - 1 \\
 & = 4
 \end{aligned}$$

$$\begin{aligned}
 19) & (1 + 6)(6 - 2) - 2 \\
 & = (7)(4) - 2 \\
 & = 28 - 2 \\
 & = 26
 \end{aligned}$$

$$\begin{aligned}
 20) & (4 - 3) \times 6(6 + 1) \\
 & = (1) \times 6(7) \\
 & = 6(7) \\
 & = 42
 \end{aligned}$$

*Homework Solutions for Friday's Class*

$$\begin{aligned}
 21) \quad & (13 + 7 \times (-2)) + 4 \times 6 \div 2 \\
 & (13 + (-14)) + 4 \times 6 \div 2 \\
 & \quad \quad \quad -1 + 4 \times 6 \div 2 \\
 & \quad \quad \quad -1 + 24 \div 2 \\
 & \quad \quad \quad -1 + 12 \\
 & \quad \quad \quad = 11
 \end{aligned}$$

$$\begin{aligned}
 22) \quad & 9^2 - (-10) \div 2 (7-12) \\
 = & 9^2 - (-10) \div 2 (-5) \\
 = & 81 - (-10) \div 2 (-5) \\
 = & 81 - (-5) (-5) \\
 = & 81 - (+25) \\
 = & 56
 \end{aligned}$$

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.

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

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

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

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

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

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

$$= +3$$

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

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

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

$$= -8$$

*Homework Solutions for Friday's Class*

5. Evaluate each expression. Then insert one pair of square brackets in each expression so it evaluates to  $-1$ .

a)  $12 \div [-4] + (-8)$

b)  $[-9] + 6 \div 3$

c)  $5 \div (-5) \times (0 + 1)$

$$\begin{array}{l} 12 \div (-4) + (-8) \\ \underbrace{\hspace{1.5cm}} \\ -3 + (-8) \\ -11 \end{array}$$

*You try*

$$\frac{14 - 2 \times 6}{2 \times 2 + 3 \times 8} = \frac{2}{28} = \frac{1}{14}$$

*top*

$$\begin{array}{r} 14 - \underline{2 \times 6} \\ 14 - 12 \\ + 2 \end{array}$$

*Bottom*

$$\begin{array}{r} 2 \times 2 + 3 \times 8 \\ 4 + \underline{3 \times 8} \\ 4 + 24 \\ 28 \end{array}$$

=

=

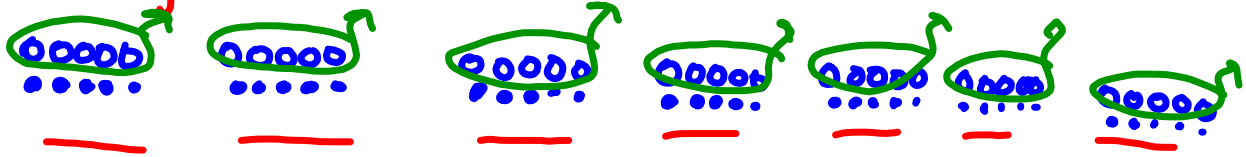


$$(-7) \times (-5) = +35$$

↑ of -5

take away

7 groups



## Class/Homework

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- 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, *9<sup>no tiles</sup>*, *12, 13, 16, 19*  
&

Evaluate the following (Show work)

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

Test Thursday, Sept. 27

