



**WARM UP GRADE 8**

Friday, Sept. 22

Section 2.5 Order of Operations with Integers  
**continued**



Evaluate: (MUST SHOW WORK)

Top  $4 - [18 - (-4)] \times (-2)$   
Bottom  $2 \times (-3)$

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

Top  $4 - [18 - (-4)] \times (-2)$   
 $= 4 - [18 + (+4)] \times (-2)$   
 $= 4 - (+22) \times (-2)$   
 $= 4 - (-44)$   
 $= 4 + (+44)$   
 48

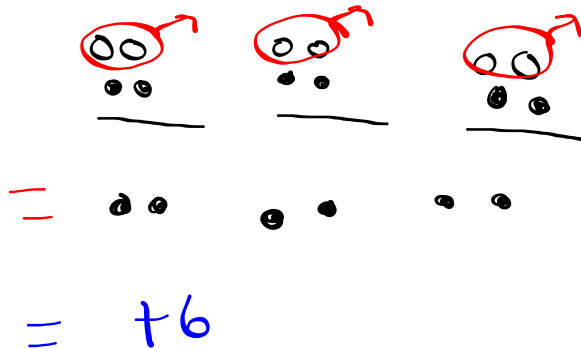
Top  $+48$   
Bottom  $-6$   
 $= -8$

Model  $(-3) \times (-2)$  with tiles

Remove 3 groups of  $(-2)$   
Need zero pairs

$\bigcirc \Rightarrow -$

$\bullet \Rightarrow +$



$$\begin{aligned} 7a) & \underline{7(4)} - 5 \\ & 28 - 5 \\ & 23 \end{aligned}$$

$$\begin{aligned} c) & (-3) + \underline{4(-7)} \\ & (-3) + (-28) \\ & -31 \end{aligned}$$

$$\begin{aligned} e) & 15 \div \underline{[10 \div (-2)]} \\ & 15 \div (-5) \\ & -3 \end{aligned}$$

$$\begin{aligned} b) & 6 \underline{[2 + (-5)]} \\ & 6 \times (-3) \\ & -18 \end{aligned}$$

$$\begin{aligned} d) & (-6) + \underline{4(-2)} \\ & -6 + (-8) \\ & -14 \end{aligned}$$

$$\begin{aligned} f) & \underline{18 \div 2} (-6) \\ & 9 \times (-6) \\ & -54 \end{aligned}$$

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

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

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

$$-12 + (-3)$$

$$-15$$

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

$$4 - (-6)$$

$$4 + (+6)$$

$$+10$$

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

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

$$12 \div 6$$

$$2$$

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

$$8 - (-6)$$

$$8 + (+6)$$

$$+14$$

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

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

$$+10$$

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

$$-18 + (+32)$$

$$+14$$

## Class/Homework

Page 92 - 93 #9 <sup>ac</sup> # 13  
#10 <sup>ac</sup> #15 → find the Mean : (Add up all Numbers and then divide the sum by the total number of numbers)  
#11, <sup>ac</sup>  
#12 <sup>abc</sup>

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<sup>Tiles</sup>  
#2(a,b...MODEL), #3, #4(just the sign),  
#5(a,c,d....show work for c,d using distributive property),  
#6(a,b,c,d), #7, 8 <sup>Box</sup>

TEST TUESDAY

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

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

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

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

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

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

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

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

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

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

$$-12 + -28$$

$$-40$$

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

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

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

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

$$+2$$

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

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

$$8 - (-4)$$

$$8 + (+4)$$

$$+12$$

$$= -4$$

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

$$= -2$$

$$12 - 4(-6)$$

$$12 - (-24)$$

$$12 + (+24)$$

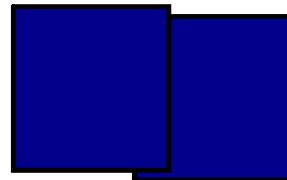
$$+36$$

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

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

$$6 \times -3$$

$$-18$$



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

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

$$-40 - (-8)$$

$$-40 + (+8)$$

$$-32$$

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.

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

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

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

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

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

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

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

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

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

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

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

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

*Homework Solutions for Friday's Class*

$$\begin{aligned} 11) \quad & 6 + 6 \times 2 + 6 \\ & \underbrace{6 + 12} + 6 \\ & 18 + 6 \\ & \underbrace{\quad\quad\quad} \\ & 24 \end{aligned}$$

$$\begin{aligned} 12) \quad & 5 - (4 - (3 - 2)) \\ & = 5 - (4 - (1)) \\ & = 5 - (3) \\ & = 2 \end{aligned}$$

*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*

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

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

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.

a)  $(-72) \div 9 + 4 \times (-3)$

$(-8) + 4 \times (-3)$

$(-8) + (-12)$

$-20$

b)  $5(-2) - 63 \div (-7)$

$= (-10) - 63 \div (-7)$

$= (-10) - (-9)$

$= (-10) + (+9)$

$= -1$

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

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

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

$= -27$

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

$= +3$

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*

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

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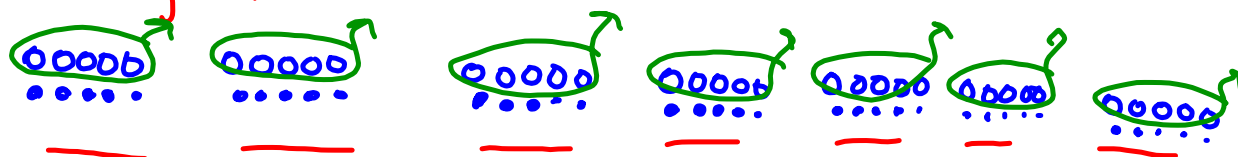


$$(-7) \times (-5) = +35$$

↑ of -5

take away

7 groups



## Attachments

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Grade 8 Order of Operations Extra Practice.pdf

Extra Practice 5 Order of Operations (Integers).pdf