



## WARM UP GRADE 8

*Tuesday, Sept. 27*

### Section 2.5 Order of Operations with Integers continued



Evaluate: (MUST SHOW WORK)

$$\frac{\text{Top } 4 - [18 - (-4)] \times (-2)}{\text{Bot } 2 \times (-3)}$$

$$\frac{\text{Bottom}}{2 \times (-3)} = (-6)$$

$$\begin{aligned} \text{Top } & 4 - [18 - (-4)] \times (-2) \\ & = 4 - (18 + (+4)) \times (-2) \\ & = 4 - (+22) \times (-2) \\ & = 4 - (-44) \\ & \quad \downarrow \quad \downarrow \\ & \quad \text{add} \quad \text{opp} \\ & = 4 + (+44) \\ & = +48 \end{aligned}$$

$$\frac{\text{Top}}{\text{Bot}} = \frac{(+48)}{(-6)} = \boxed{-8}$$

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.

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

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

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

add or

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

2. Evaluate. Show all steps.

$$\begin{aligned} \text{a) } & 4(-8) - 9 \\ & = (-32) - 9 \\ & = (-32) + (-9) \\ & = -41 \end{aligned}$$

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

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

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

3. Evaluate.

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

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

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

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

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

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

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

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

$= +3$

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

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

## 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*

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

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

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

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

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

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

*Homework Solutions for Friday's Class*

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

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



*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*

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

=

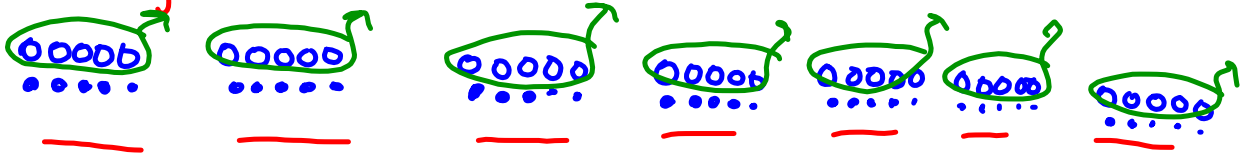
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$$(-7) \times (-5) = +35$$

↑  
of -5

take  
away

7 groups



## Class/Homework

Page 97

- #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

&  
 Evaluate the following (Show work)

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

Test Thursday, Sept. 29

#3)  $-2^{\circ}\text{C}$  for 30 min for 4 hr.

$$\begin{aligned} &6 + (-2 \times 8) \\ &6 + (-16) \\ &-10 \end{aligned}$$