

WARM UP GRADE 8

Wednesday, Sept. 17

Name: _____

Section 2.5 Order of Operations with Integers

Similar to Warmup quiz on FRIDAY



Answer the following . (No Calculators)

- 1) $(-10) \times (-3) = +30$ 2) $(-36) \div (+6) = -6$ 3) $(-10) \times (+2) = -20$ 4) $(+34) + (-3) = +31$
 5) $(-60) \div (+5) = -12$ 6) $(-17) - (-4) = -13$ 7) $(-21) + (-7) = -28$ 8) $(+24) \div (-3) = -8$
 9) $(+20) + (-11) = +9$ 10) $(-23) + (-1) = -24$ 11) $(+4) \times (-5) = -20$ 12) $(+15) - (-1) = +16$

X or \div
 $(+)(+) = +$ $(-)(+) = -$
 $(-)(-) = +$

+
 → same or different
 ↓ add ↓ difference
 look a sign on large #

Sub
 same ↑ add opp

Show work (Do the question in steps...not just the final answer)

13) $(+18) - (-2) + (+4)$
 $= (+18) + (+2) + (+4)$
 $= (+20) + (+4)$
 $= (+24)$

14) $(-20) + (-3) - (+5)$
 $= (-23) - (+5)$
 $= (-23) + (-5)$
 $= (-28)$

Sheet 283

Homework Solutions

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

$$= +5 + (-2)$$

$$= +3$$

$$b) (-3) - (+6)$$

$$(-3) + (-6)$$

$$= -9$$

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

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

$$= -11$$

$$d) (-7) - (-1)$$

$$(-7) + (+1)$$

$$= -6$$

$$e) (+3) - (+8)$$

$$(+3) + (-8)$$

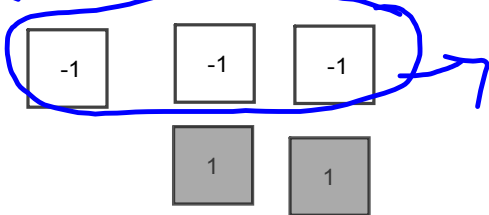
$$= -5$$

$$f) (+7) - (-9)$$

$$(+7) + (+9)$$

$$= +16$$

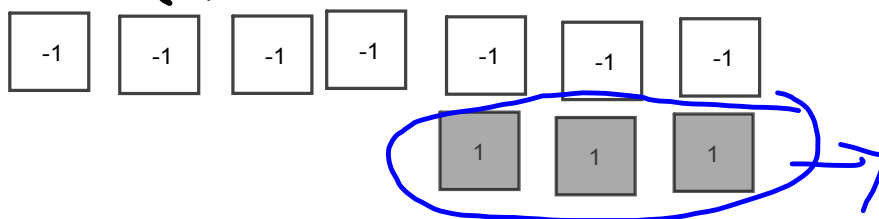
2 a) $(-1) - (-3)$



$$(-1) + (+3)$$

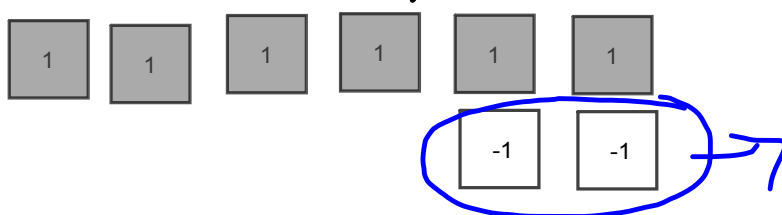
$$+2$$

b) $(-4) - (+3)$



$$= -7$$

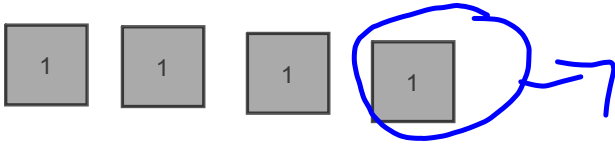
c) $(+4) - (-2)$



$$= +6$$

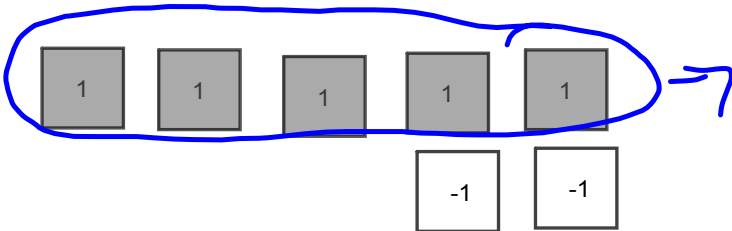
Homework Solutions

d) $(+4) - (+1)$

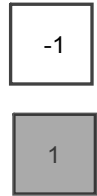


$+3$

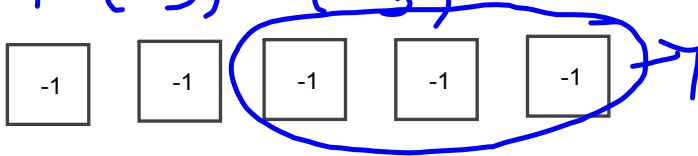
e) $(+3) - (+5)$



$= -2$

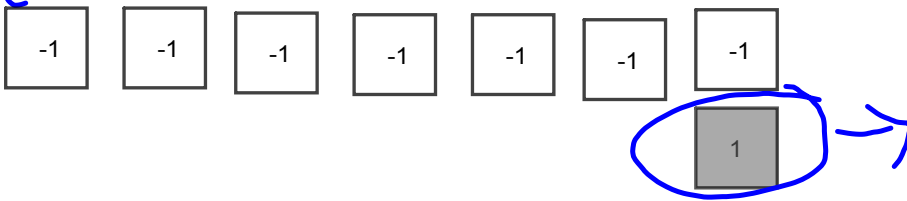


f) $(-5) - (-3)$



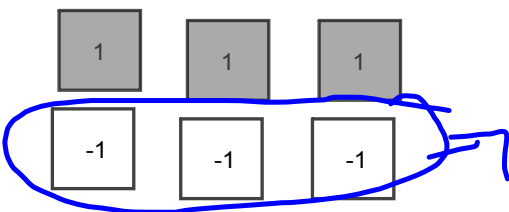
$= -2$

g) $(-6) - (+1)$



$= -7$

h) $0 - (-3)$



$= +3$

Homework Solutions

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

$$\begin{aligned} c) & (-7) - (-1) \\ & (-7) + (+1) \\ & -6 \end{aligned}$$

$$\begin{aligned} e) & (-3) - (+8) \\ & (-3) + (-8) \\ & -11 \end{aligned}$$

$$\begin{aligned} g) & 0 - (+2) \\ & 0 + (-2) \\ & = -2 \end{aligned}$$

$$\begin{aligned} i) & (+6) - (-6) \\ & (+6) + (+6) \\ & +12 \end{aligned}$$

$$\begin{aligned} b) & (+6) - (-8) \\ & (+6) + (+8) \\ & +14 \end{aligned}$$

$$\begin{aligned} d) & (+4) - (-7) \\ & (+4) + (+7) \\ & +11 \end{aligned}$$

$$\begin{aligned} f) & (+5) - (-7) \\ & (+5) + (+7) \\ & +12 \end{aligned}$$

$$\begin{aligned} h) & (-20) - (-11) \\ & -20 + (+11) \\ & -9 \end{aligned}$$

$$\begin{aligned} j) & (-8) - (+8) \\ & -8 + (-8) \\ & -16 \end{aligned}$$

$$4. \quad (+2) - (-21)$$

$$(+2) + (+21)$$

$$+23$$

$$(-21) - (+2)$$

$$(+2) - (-21)$$

$$(+2) + (+21)$$

The temperature increased 23°

Homework Solutions

$$9a) \quad (-2) - (+3)$$

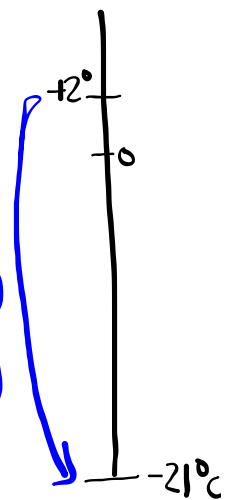
$$(-2) + (-3)$$

$$-5$$

$$(+3) - (-2)$$

$$(+3) + (+2)$$

$$+5$$



$$b) \quad (-5) - (-3)$$

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

$$-2$$

$$(-3) - (-5)$$

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

$$+2$$

Order is important when subtracting.

Homework Solutions

$$\begin{aligned} \text{b a) } & (-5) - (-1) - (+3) \\ & (-5) + (+1) + (-3) \\ & = -7 \end{aligned}$$

$$\begin{aligned} \text{b) } & (-4) - (-6) - (-1) \\ & -4 + (+6) + (+1) \\ & +3 \end{aligned}$$

$$\begin{aligned} \text{c) } & (-5) - (+8) - (+6) \\ & (-5) + (-8) + (-6) \\ & -19 \end{aligned}$$

$$\begin{aligned} \text{d) } & (+10) - (+3) - (-7) \\ & +7 + (+7) \\ & +14 \end{aligned}$$

$$\begin{aligned} \text{e) } & (-2) - (-8) - (+4) \\ & (-2) + (+8) + (-4) \\ & +2 \end{aligned}$$

$$\begin{aligned} \text{f) } & (-3) - (-3) - (-7) \\ & 0 + (+7) \\ & +7 \end{aligned}$$

$$\begin{aligned} \text{g) } & (+4) - (-1) - (-5) \\ & (+4) + (+1) + (+5) \\ & +10 \end{aligned}$$

$$\begin{aligned} \text{h) } & (-3) - (-4) - (+5) \\ & (-3) + (+4) + (-5) \\ & -4 \end{aligned}$$

Order of Operations

We have already learned that you can add or multiply in any order, but that order matters with subtraction and division. Therefore, **if you have a question that contains more than one operation, the order in which you answer the question is very important.**

There is a set of rules to follow. Often students remember the order, by **remembering the word BEDMAS**. That is, first you solve anything that is inside the brackets. Next, you simplify any exponents. Then, do all the multiplication and division in the question, in the order it occurs from left to right. Finally, you do the addition and subtraction in the order it occurs from left to right.

B - Brackets

~~**E**~~ - Exponents

**D } Division and Multiplication, in the order
M } it occurs from left to right.**

**A } Addition and Subtraction, in the order it
S } occurs from left to right.**

Examples: **BADMAS**

$$\begin{aligned} \text{a) } & 6 - 2 \times 4 \\ & = 6 - 8 \\ & = (-2) \end{aligned}$$

$$\begin{aligned} \text{c) } & 9 \times 3 - 4 \times 5 \\ & = 27 - 20 \\ & = 7 \end{aligned}$$

$$\begin{aligned} \text{e) } & 5 \times 5 - (8 - 2 \times 3) \\ & = 5 \times 5 - (8 - 6) \\ & = 5 \times 5 - (2) \\ & = 25 - 2 \\ & = 23 \end{aligned}$$

$$\text{g) } 6 - 4 \times 4 \div 8 \times (2 + 1)$$

==
==
=

$$\begin{aligned} \text{b) } & 4 \times 4 + 2 - 8 \div 4 \\ & = 16 + 2 - 2 \\ & = 16 + 2 - 2 \\ & = 16 \end{aligned}$$

$$\begin{aligned} \text{d) } & 6 \times 8 \div 4 \times 3 \\ & = 48 \div 4 \times 3 \\ & = 12 \times 3 \\ & = 36 \end{aligned}$$

$$\begin{aligned} \text{f) } & 2 + 8 \times 4 - (9 + 1) \\ & = 2 + 32 - 10 \\ & = 34 - 10 \\ & = 24 \end{aligned}$$

$$\begin{aligned} \text{*h) } & 4 \times 5 \times 5 - [8 - (-3) \times (+5)] \\ & = 4 \times 5 \times 5 - [8 - (-15)] \\ & = 4 \times 5 \times 5 - [8 + 15] \\ & = 4 \times 5 \times 5 - (+23) \\ & = 20 \times 5 - (+23) \\ & = 100 - (+23) \\ & = +100 + (-23) \\ & = +77 \end{aligned}$$

Example:

$$\frac{[16 - (-4)] \times (-3)}{3(-2)}$$

Step 1)

Step 2)

$$\begin{aligned} \text{Top } [16 - (-4)] \times (-3) & \\ &= (16 + (+4)) \times (-3) \\ &= (+20) \times (-3) \\ &= (-60) \end{aligned}$$

Step 3)

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

$$\begin{aligned} \frac{\text{Top}}{\text{Bottom}} &= \frac{(-60)}{(-6)} \text{ divide} \\ &= +10 \end{aligned}$$

Hint: Evaluate Numerator and Denominator separately

Examples:

$$\begin{aligned} \text{a) } & 6 - 2 \times 4 \\ & 6 - 8 \\ & 6 + (-8) = -2 \end{aligned}$$

$$\begin{aligned} \text{b) } & 4^2 + 2 - 8 \div 4 \\ & 16 + 2 - 8 \div 4 \\ & 16 + 2 - 2 \\ & 16 \end{aligned}$$

$$\begin{aligned} \text{c) } & 9 \times 3 - 4 \times 5 \\ & 27 - 20 \\ & 7 \end{aligned}$$

$$\begin{aligned} \text{d) } & 6 \times 8 \div 4 \times 3 \\ & 48 \div 4 \times 3 \\ & 12 \times 3 = 36 \end{aligned}$$

$$\begin{aligned} \text{e) } & 5^2 - (8 - 2 \times 3) \\ & 5^2 - (8 - 6) \\ & 25 - 2 \\ & 23 \end{aligned}$$

$$\begin{aligned} \text{f) } & 2 + 8 \times 4 - (9 + 1) \\ & 2 + 8 \times 4 - 10 \\ & 2 + 32 - 10 \\ & 24 \end{aligned}$$

$$\begin{aligned} \text{g) } & 6 - 4^2 \div 8 \times (2 + 1) \\ & 6 - 4^2 \div 8 \times 3 \\ & 6 - 16 \div 8 \times 3 \\ & 6 - 2 \times 3 \\ & 6 - 6 = 0 \end{aligned}$$

$$\begin{aligned} \text{h) } & 4 \times 5^2 - (8 - (-3) \times 5) \\ & 4 \times 5^2 - (8 - (-15)) \\ & 4 \times 5^2 - (8 + 15) \\ & 4 \times 25 - 23 \\ & 100 - 23 = 77 \end{aligned}$$

Class/Homework

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3-7 MUST SHOW WORK

Evaluate (Show work)
Test Next Week
#3 ace Probably Sept. 29
#5 (work yours out first then compare)
#7 acde