

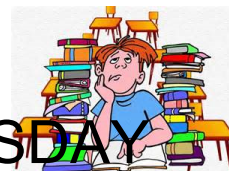
WARM UP GRADE 8

Name: _____

Wednesday, Sept. 20

Section 2.5 Order of Operations with Integers

Similar to Warmup quiz on THURSDAY



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) $(+15) - (-1) = +16$
 $(+15) \downarrow + (+1)$

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

$$\begin{aligned}
 & 13) (+18) - (-2) + (+4) \\
 & \quad \downarrow \downarrow \\
 & \quad \text{add opp} \\
 & = (+18) + (+2) + (+4) \\
 & = (+20) + (+4) \\
 & \quad +24
 \end{aligned}$$

$$\begin{aligned}
 & 14) (-20) + (-3) - (-5) \\
 & \quad \downarrow \downarrow \\
 & \quad \text{add opp} \\
 & = (-23) + (+5) \\
 & = -18
 \end{aligned}$$

Sheet 283

Homework Solutions

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

$$\begin{aligned} b) & (-3) - (+6) \\ & (-3) + (-6) \\ & = -9 \end{aligned}$$

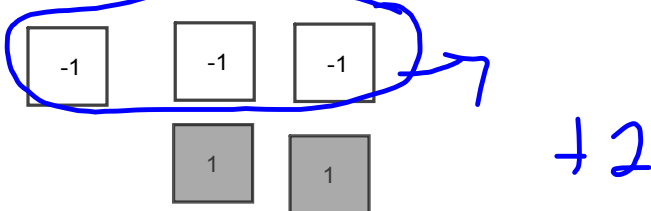
$$\begin{aligned} c) & (-6) - (+5) \\ & (-6) + (-5) \\ & = -11 \end{aligned}$$

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

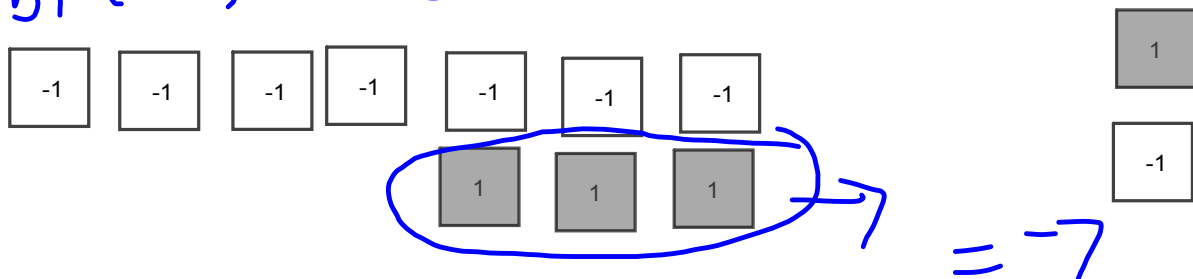
$$\begin{aligned} e) & (+3) - (+8) \\ & (+3) + (-8) \\ & = -5 \end{aligned}$$

$$\begin{aligned} f) & (+7) - (-9) \\ & (+7) + (+9) \\ & = +16 \end{aligned}$$

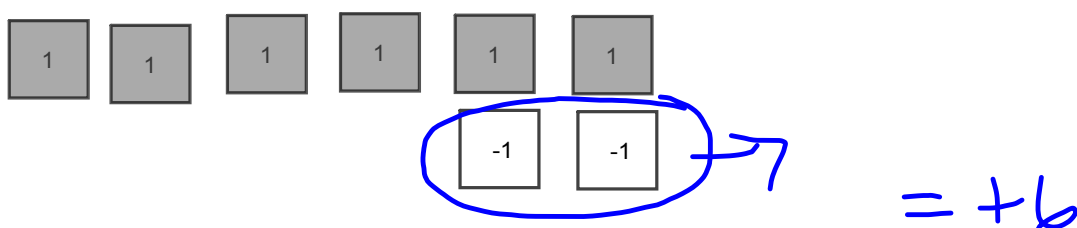
$$2 a) (-1) - (-3)$$



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

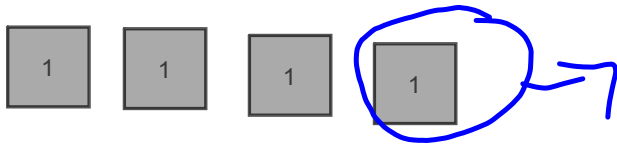


$$c) (+4) - (-2)$$



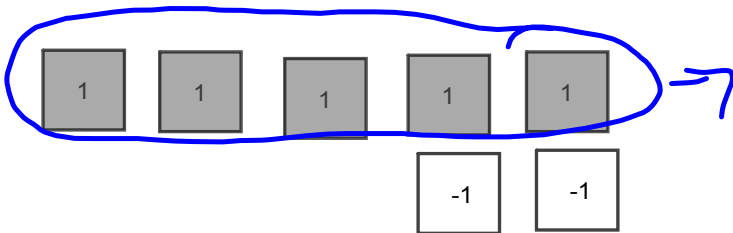
Homework Solutions

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

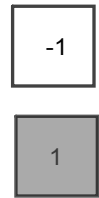


+3

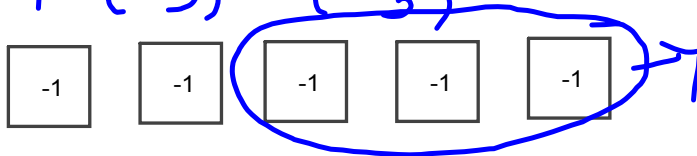
e) $(+3) - (+5)$



= -2

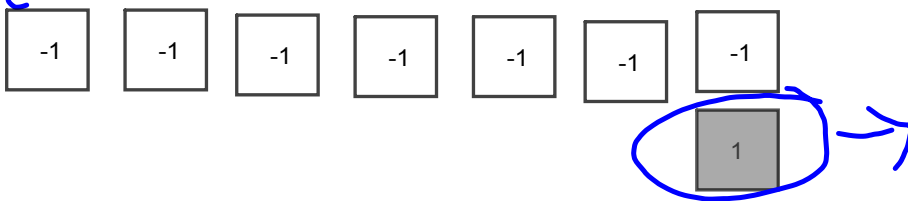


f) $(-5) - (-3)$



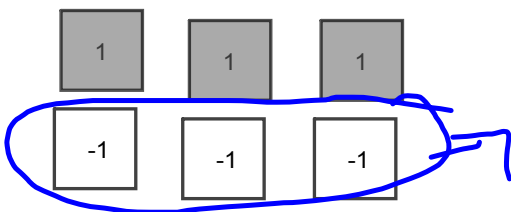
= -2

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



= -7

h) $0 - (-3)$



= +3

$$3 \text{ a) } (+5) - (+4) \\ = +1$$

$$\text{c) } (-7) - (-1) \\ (-7) + (+1) \\ -6$$

$$\text{e) } (-3) - (+8) \\ (-3) + (-8) \\ -11$$

$$\text{g) } 0 - (+2) \\ 0 + (-2) \\ = -2$$

$$\text{h) } (+6) - (-6) \\ (+6) + (+6) \\ +12$$

Homework Solutions

$$\text{b) } (+6) - (-8) \\ (+6) + (+8) \\ +14$$

$$\text{d) } (+4) - (-7) \\ (+4) + (+7) \\ +11$$

$$\text{f) } (+5) - (-7) \\ (+5) + (+7) \\ +12$$

$$\text{h) } (-20) - (-11) \\ -20 + (+11) \\ -9$$

$$\text{j) } (-8) - (+8) \\ -8 + (-8) \\ -16$$

$$4. \begin{array}{l} (+2) - (-21) \\ (+2) + (+21) \\ +23 \end{array}$$

Homework Solutions

$$(-21) + (x) = (+2)$$

The temperature increased 23° $x = (+2) - (-21)$

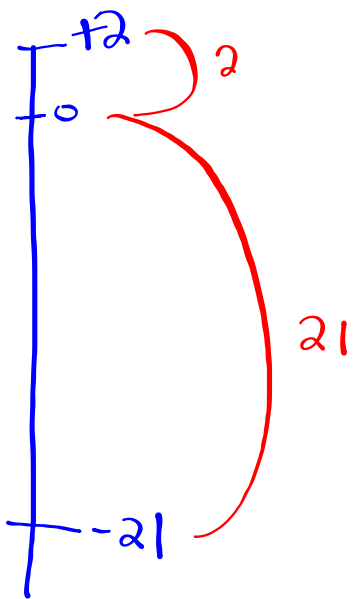
$$9a) \begin{array}{l} (-2) - (+3) \\ (-2) + (-3) \\ -5 \end{array}$$

$$\begin{array}{l} (+3) - (-2) \\ (+3) + (+2) \\ +5 \end{array}$$

$$b) \begin{array}{l} (-5) - (-3) \\ (-5) + (+3) \\ -2 \end{array}$$

$$\begin{array}{l} (-3) - (-5) \\ (-3) + (+5) \\ +2 \end{array}$$

Order is important when subtracting.



Homework Solutions

$$\begin{array}{l}
 \text{b a) } (-5) - (-1) - (+3) \\
 (-5) + (+1) + (-3) \\
 \underline{-4} \quad + (-3) \\
 = -7
 \end{array}$$

$$\begin{array}{l}
 \text{b) } (-4) - (-6) - (-1) \\
 -4 + (+6) + (+1) \\
 \underline{+2} \quad + (+1) \\
 +3
 \end{array}$$

$$\begin{array}{l}
 \text{c) } (-5) - (+8) - (+6) \\
 (-5) + (-8) + (-6) \\
 \underline{-13} \quad + (-6) \\
 -19
 \end{array}$$

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

$$\begin{array}{l}
 \text{e) } (-2) - (-8) - (+4) \\
 (-2) + (+8) + (-4) \\
 +2
 \end{array}$$

$$\begin{array}{l}
 \text{f) } (-3) - (-3) - (-7) \\
 0 + (+7) \\
 +7
 \end{array}$$

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

$$\begin{array}{l}
 \text{h) } (-3) - (-4) - (+5) \\
 (-3) + (+4) + (-5) \\
 -4
 \end{array}$$

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: **BEDMAS**

$$a) 6 - 2 \times 4$$

$$(6) - (8)$$

$$(-2)$$

$$c) 9 \times 3 - 4 \times 5$$

$$= 27 - 4 \times 5$$

$$= 27 - 20$$

$$= 7$$

$$e) 5 \times 5 - (8 - 2 \times 3)$$

$$= 5 \times 5 - (8 - 6)$$

$$= 5 \times 5 - 2$$

$$= 25 - 2$$

$$= 23$$

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

$$= 6 - 4 \times 4 \div 8 \times 3$$

$$= 6 - 16 \div 8 \times 3$$

$$= 6 - 2 \times 3$$

$$= 6 - 6$$

$$= 0$$

$$b) 4 \times 4 + 2 - 8 \div 4$$

$$16 + 2 - 8 \div 4$$

$$16 + 2 - 2$$

$$18 - 2$$

$$d) 6 \times 8 \div 4 \times 3$$

$$48 \div 4 \times 3$$

$$12 \times 3$$

$$36$$

$$f) 2 + 8 \times 4 - (9 + 1)$$

$$= 2 + 8 \times 4 - 10$$

$$= 2 + 32 - 10$$

$$= 34 - 10$$

$$= 24$$

$$h) 4 \times 5 \times 5 - [8 - (-3) (+5)]$$

$$= 4 \times 5 \times 5 - [8 - (-15)]$$

$$= 4 \times 5 \times 5 - [8 + (+15)]$$

$$= 4 \times 5 \times 5 - (23)$$

$$20 \times 5 - 23$$

$$100 - 23$$

$$77$$

Example:

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

Top

$$[16 - (-4)] \times (-3)$$

add opp

$$[16 + (+4)] \times (-3)$$

$$(+20) \times (-3)$$

$$\boxed{\text{Top} \quad -60}$$

Bottom $3(-2) = -6$

Hint: Evaluate Numerator and Denominator separately

Step 1) Top

Step 2)

Step 3) $\frac{\text{Top}}{\text{Bottom}} \leftarrow \div$

$$\frac{-60}{-6}$$

$$= \boxed{+10}$$

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

3 abdf → work them out

5

7 a b c e

Test Next Week

Probably Sept. 26

Quiz tomorrow Tuesday