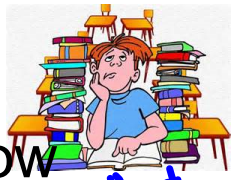
# Warm Up Grade 8

*Tuesday, Sept. 18*

Name:_____

Section 2.5 Order of Operations with Integers



## Similar to Warmup quiz on Tomorrow

Answer the following . (No Calculators)

same, diff, diff, diff → what is the difference #

1) (-10) x (-3) = +30 2) (-36) ÷ (+6) = -6 3) (-10) x (+2) = -20 4) (+34) + (-3) = +31

5) (-60) ÷ (+5) = -12 6) (-17) - (-4) = -13 (add opp) 7) (-21) + (-7) = -28 8) (+24) ÷ (-3) = -8

9) (+20) + (-11) = +9 10) (-23) + (-1) = -24 11) (+4) x (-5) = -20 12) (+15) - (-1) = +16

6) (-17) + (+4)

(+15) + (+1) (add, opp)

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

13) (+18) - (-2) + (+4)

(add, opp)

(+18) + (+2) + (+4)

(+20) + (+4)

+24

14) (-20) + (-3) - (+5)

(-23) − (+5)

(add, opp)

(-23) + (-5)

-28

X or ÷

(+) x (+) ⇒ +

(-) x (-)

Signs Same for x or ÷ ⇒ +

Different x or ÷ ⇒ −

(−) ÷ (+) ⇒ −

(+) ÷ (−) ⇒ −

# Adding

o) (+ ) + (-)

different

What's the difference between # not Signs

(Big # - small #)

→ Sign on largest #

oo) Same Sign

(- ) + (-) => keep Sign add #

# Subtraction

↳ add opposit follow adding Rules

(+3) - (-7)

add opp

(+3) + (+7)

Same

+10

# Homework Solutions

## Sheet 283

1a) $(+5)-(+2)$
$=+5+(-2)$
$=+3$

b) $(-3)-(+6)$
$(-3)+(-6)$
$=-9$

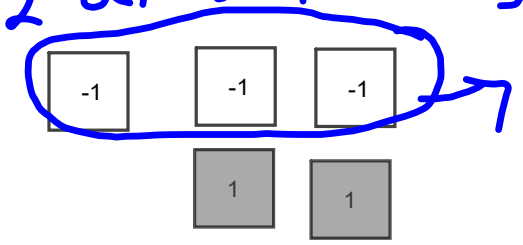
c) $(-6)-(+5)$
$(-6)+(-5)$
$-11$

d) $(-7)-(-1)$
$(-7)+(+1)$
$-6$

e) $(+3)-(+8)$
$(+3)+(-8)$
$-5$

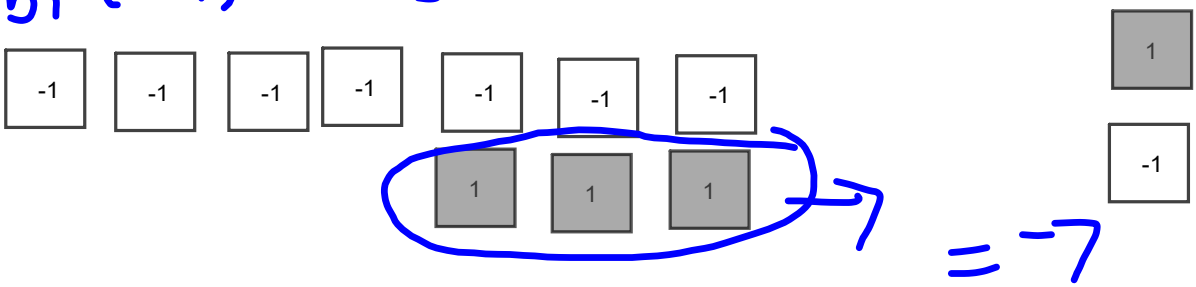
f) $(+7)-(-9)$
$(+7)+(+9)$
$+16$

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



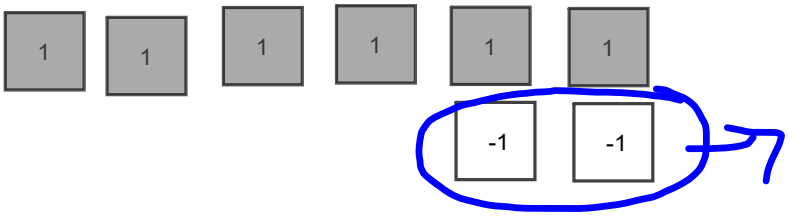

$+2$

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




$=-7$

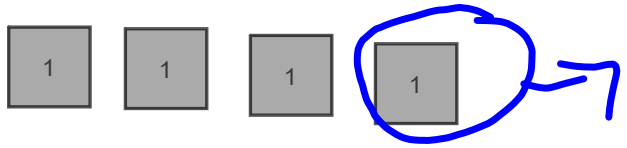
c) $(+4)-(-2)$




$=+6$

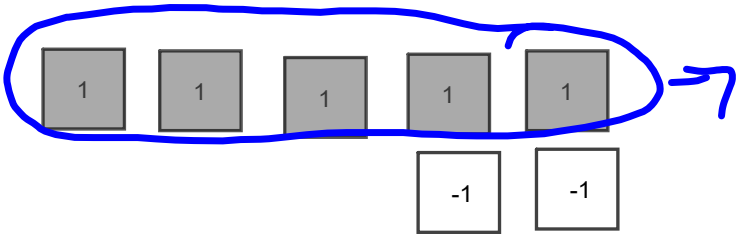
# Homework Solutions

d) (+4) − (+1)

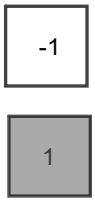



+3

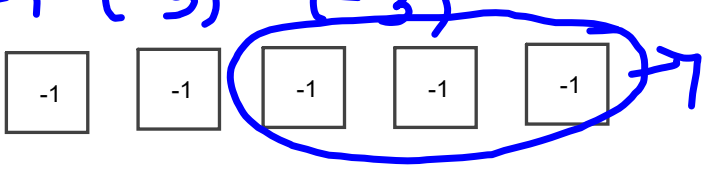
e) (+3) − (+5)




= −2

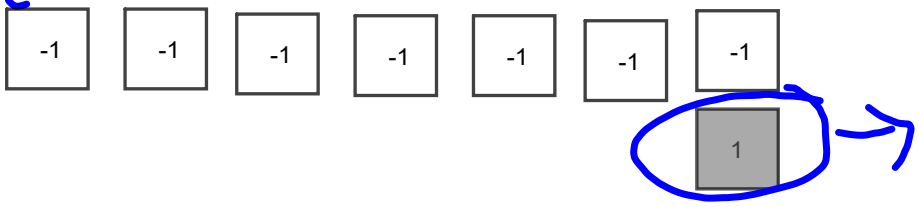



f) (−5) − (−3)



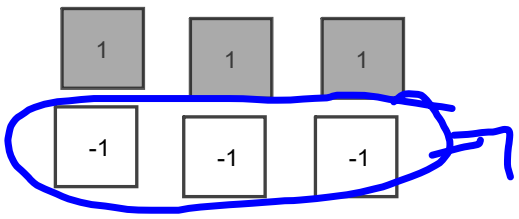

= −2

g) (−6) − (+1)




= −7

h) 0 − (−3)




= +3

## Homework Solutions

3 a) $(+5)-(+4)$

$=+1$

b) $(+6)-(-8)$

$(+6)+(+8)$

$+14$

c) $(-7)-(-1)$

$(-7)+(+1)$

$-6$

d) $(+4)-(-7)$

$(+4)+(+7)$

$+11$

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

$(-3)+(-8)$

$-11$

f) $(+5)-(-7)$

$(+5)+(+7)$

$+12$

g) $0-(+2)$

$0+(-2)$

$=-2$

h) $(-20)-(-11)$

$-20+(+11)$

$-9$

i) $(+6)-(-6)$

$(+6)+(+6)$

$+12$

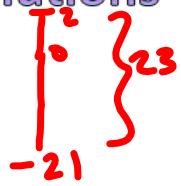
J) $(-8)-(+8)$

$-8+(-8)$

$-16$

## Homework Solutions

4. $(+2) - (-21)$
$(+2) + (+21)$
$+23$




The temperature increased 23°

5a) $(-2) - (+3)$
$(-2) + (-3)$
$-5$

$(+3) - (-2)$
$(+3) + (+2)$
$+5$

b) $(-5) - (-3)$
$(-5) + (+3)$
$-2$

$(-3) - (-5)$
$(-3) + (+5)$
$+2$

Order is important when subtracting.

## Homework Solutions

6 a) $(-5) - (-1) - (+3)$

$(-5) + (+1) + (-3)$

$= -7$

b) $(-4) - (-6) - (-1)$

$-4 + (+6) + (+1)$

$+3$

c) $(-5) - (+8) - (+6)$

$(-5) + (-8) + (-6)$

$-19$

d) $(+10) - (+3) - (-7)$

$+7 + (+7)$

$+14$

e) $(-2) - (-8) - (+4)$

$(-2) + (+8) + (-4)$

$+2$

f) $(-3) - (-3) - (-7)$

$0 + (+7)$

$+7$

g) $(+4) - (-1) - (-5)$

$(+4) + (+1) + (+5)$

$+10$

h) $(-3) - (-4) - (+5)$

$(-3) + (+4) + (-5)$

$-4$

# 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) $6 - 2 \times 4$

$= 6 - 8$

$= -2$

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

$= 16 + 2 - 8 \div 4$

$= 16 + 2 - 2$

$= 18 - 2$

$= 16$

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

$= 27 - 4 \times 5$

$= 27 - 20$

$= 7$

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

$= 48 \div 4 \times 3$

$= 12 \times 3$

$= 36$

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

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

$= 5 \times 5 - (2)$

$= 25 - 2$

$= 23$

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

$= 2 + 8 \times 4 - 10$

$= 2 + 32 - 10$

$= 34 - 10$

$= 24$

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

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

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

$= 6 - 2 \times (3)$

$= 6 - 6$

$= 0$

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

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

(add, opp)

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

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

$= 20 \times 5 - 23$

$= 100 - 23$

$= 77$

Example:

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

Hint: Evaluate Numerator and Denominator separately

Step 1) Top $[16-(-4)] \times (-3)$

add opp

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

$(+20) \times -3$

$-60$

Step 2) $3(-2)$

$= -6$

Step 3) $\frac{-60}{-6}$

$= +10$

Step1| Do Numerato first

Step2| Do Denominator

Step3| Divide Num ÷ Den

# Examples:

a) $6 - 2 \times 4$

$6 - 8$

$6 + (-8) = -2$

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

$16 + 2 - 8 \div 4$

$16 + 2 - 2$

$16$

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

$27 - 20$

$7$

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

$48 \div 4 \times 3$

$12 \times 3 = 36$

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

$5^2 - (8 - 6)$

$25 - 2$

$23$

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

$2 + 8 \times 4 - 10$

$2 + 32 - 10$

$24$

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

$6 - 4^2 \div 8 \times 3$

$6 - 16 \div 8 \times 3$

$6 - 2 \times 3$

$6 - 6 = 0$

h) $4 \times 5^2 - (8 - (-3) \times 5)$

$4 \times 5^2 - (8 - (-15))$

$4 \times 5^2 - (8 + 15)$

$4 \times 25 - 23$

$100 - 23 = 77$

**Homework Sheet 247 #1-7**

# Class/Homework

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# MUST SHOW WORK

3 a b df → work them ow

# 5

Test Next Week

Probably Sept. 26