

$$\bullet = +1$$

$$O = -1$$

## WARM UP GRADE 8

Grade 7 Review  
Sep 1. 20



1) Model the following using tiles

a)  $(-7) + (-2) = -9$



b)  $(+4) + (-6) = -2$



2) Use rules to answer the following:

- |                          |                          |                           |
|--------------------------|--------------------------|---------------------------|
| a) $(-15) + (+13) = -2$  | b) $(+32) + (+5) = +37$  | c) $(+16) + (-27) = -11$  |
| d) $(+45) + (-21) = +24$ | e) $(-15) + (-20) = -35$ | f) $(-100) + (+14) = -86$ |

3) Represent the following as an addition statement:

- a) The temperature is  $15^{\circ}\text{C}$  at lunch then drops  $4^{\circ}$ . What is the new temperature?

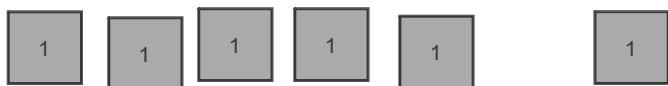
$$(+15) + (-4) = (+11)$$

The new temperature is  $+11^{\circ}\text{C}$ .

# gr 8 u2 int day 9 Review of Subtracting Integers (and answers to worksheets) September 20, 2019

Homework Sheet 235 # 1-7

1a)  $(+5) + (+1)$



## Homework Solutions

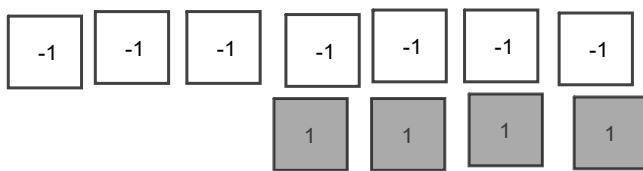
$$= +6$$

b)  $(-1) + (+8)$



c)  $0 + (-5) = -5$

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



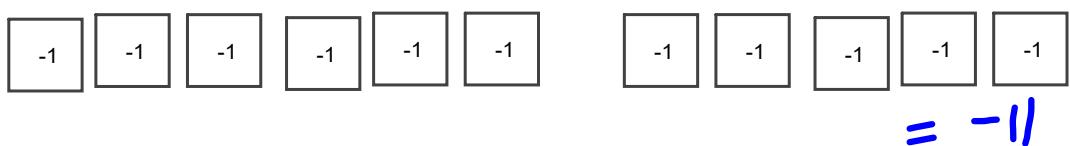
$$= -3$$

e)  $(-2) + (-2)$



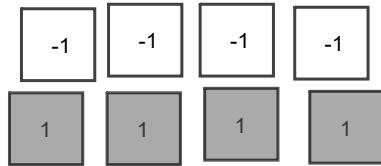
$$= -4$$

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



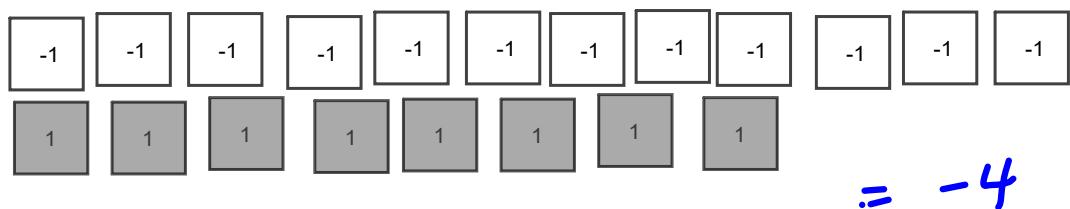
$$= -11$$

g)  $(+4) + (-4)$



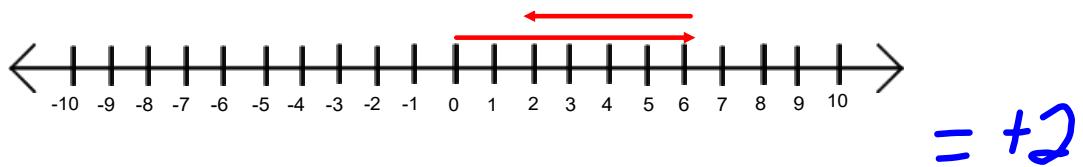
$$= 0$$

h)  $(-12) + (+8)$

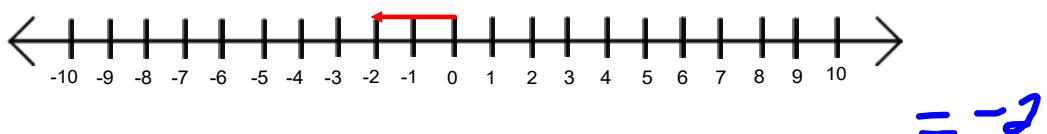


$$= -4$$

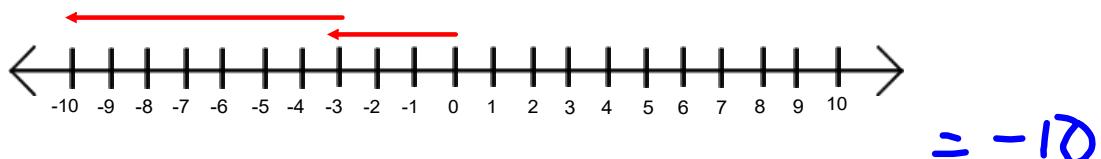
2 a)  $(+6) + (-4)$

**Homework Solutions**  
 Sheet 235


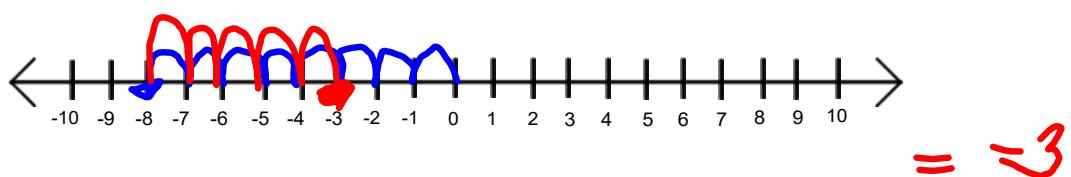
b)  $0 + (-2)$



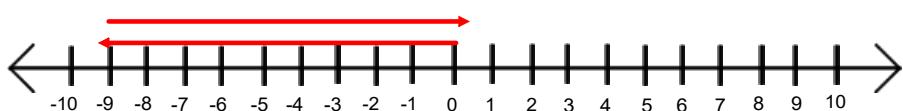
c)  $(-3) + (-7)$



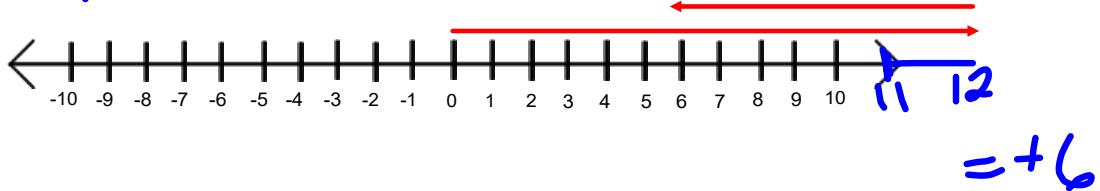
d)  $(-8) + (+5)$



e)  $(-9) + (+9)$



f)  $(+12) + (-6)$        $(+12) + (+6) = +18$  = 0



g)  $(-14) + (-1) = -15$

h)  $(+3) + (-14) = -11$

3) a)  $(+5) + (\underline{+3}) = +8$

b)  $(\underline{-1}) + (-3) = -4$

c)  $(+3) + (\underline{-2}) = +1$

d)  $(-5) + (\underline{+2}) = -3$

e)  $(+2) + \underline{-1} = +1$

f)  $\underline{+6} + (-6) = 0$

4a)  $(+2) + (+3) = +5$

b)  $(-3) + (+4) = +1$

c)  $(-4) + (-5) = -9$

d)  $(+8) + (-1) = +7$

e)  $(-10) + (-6) = -16$

f)  $(+4) + (-13) = -9$

5) a)  $(-4) + (+7) = +3$

b)  $(0) + (-6) = -6$

6 a)  $(+7) + (-5) + (+6)$  **Homework Solution**  
 $(+2) + (+6) = +8$  sheet 235

b)  $(-9) + (+2) + (-3)$   
 $-7 + -3 = -10$

c)  $(+1) + (-6) + (+4) + (-7)$   
 $(+5) + (-13) = -8$

d)  $(-3) + (+5) + (-1) + (+8)$   
 $(+2) + (-1) + (+8)$   
 $(+1) + (+8)$

e)  $(+12) + (-9) + (+11) + (-20)$

or  $(+23) + (-29)$

-6

f)  $(-13) + (+25) + (-5) + (-17)$   
 $(+12) + (-5) + (-17)$   
 $+7 + (-17)$   
 $-10$

$$\text{c)} (+1) + (-6) + (+11)$$
$$(-5) + (+11)$$
$$+ 6$$

Notes

~~model~~ ~~remove~~ ~~-5~~ ~~< unshade~~

$$(-2) - (-5)$$

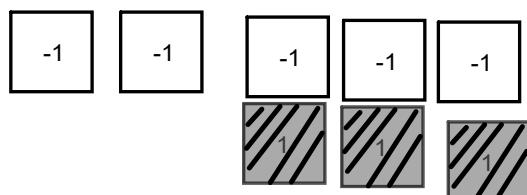
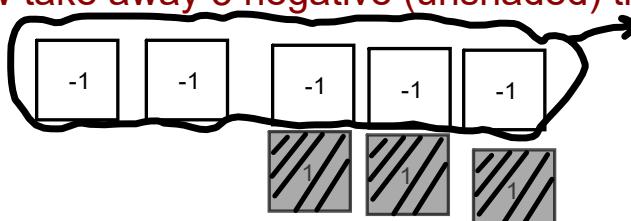
2 unshaded

Step 1) Model the first integer

There are not enough tile to take away -5. To take away -5, we need 3 more negative tiles.

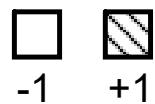
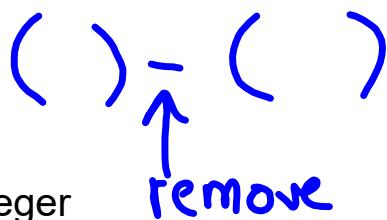
Sept 2) We add ZERO pairs without changing the value.

Add 3 shaded and 3 unshaded to tiles.

Sept 3) Now take away 5 negative (unshaded) tiles.

+3 left

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

**Subtracting with tiles**

- Always model the first integer

- Remove second integer

\*if there are not enough to remove then add zero pairs of tiles and it does not change the question

$$\text{Ex1) } (-7) - (-3)$$

. 11

Start with 7 negative tiles, then ask yourself if you can remove 3 negative tiles. YES

=

To show removing, circle and point arrow away



$$= 0000$$

(Remodel answer)

$$\text{Ex2) } (-5) - (+2)$$

| Step 1) Start with 5 negative tiles, then ask yourself if you can remove 2 positive tiles? NO

To show removing, circle and point arrow away



Step 2)

Need to add zero pairs ( two positive and 2 negative)



Step 3) Now remove 2 positive tiles



$$= -7$$

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

$\uparrow$        $\uparrow$   
  add    opposite

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

↓  
OPP

$$(+2) + (+3) = \boxed{+5}$$

Subtracting  
Integers

→ add the  
opposite

→ switch  
subtracting  
sign to  
addition

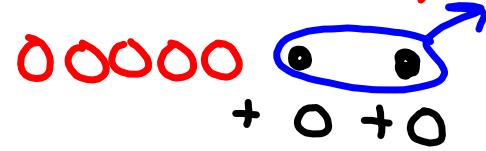
→ Switch  
sign after  
subtraction  
to opposite

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



$$= \text{oooo}$$

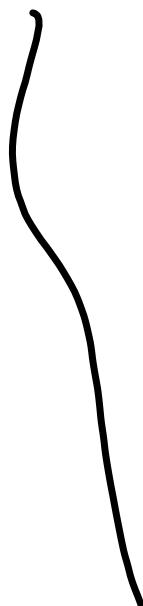
Ex)  $(-5) - (+2)$



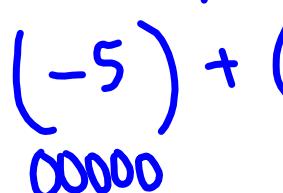
$$= \text{oooooo} \text{ oo}$$

$$=-7$$

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



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



Your Turn

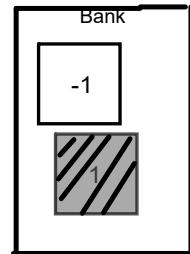
**Subtracting Integers using modeling**

May need to add zero pairs in order to subtract

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

oo = +

$$\begin{array}{r} (+5) \\ \underline{- (+3)} \\ (+5) + (-3) = +2 \end{array}$$



$$(-8) - (-4)$$

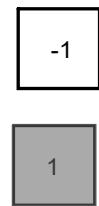
$$\begin{array}{r} (-8) \\ \underline{- (-4)} \\ (-8) + (+4) \\ - 4 \end{array}$$

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

$$\begin{array}{r} (-6) \\ \underline{+ (-5)} \\ - 1 \end{array}$$

$$(-4) - (-6)$$

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



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

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

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

$$\begin{array}{r} (+1) \\ \underline{+ (-3)} \\ +4 \end{array}$$

$$\begin{array}{r} (+1) \\ + (+3) \\ = \end{array}$$

## Subtracting Rule

- Keep the sign on the first integer and "ADD the OPPOSITE"

Keep sign the same on the first integer  
change the subtraction to addition and  
change the sign on the second integer.

THEN USE ADDITION RULES

Ex 1)  $(+9) - (-5)$

$(+9) + (+5)$  must show this step

now addition rule

$(+9) + (+5) = +14$

Use the rule for Subtraction to answer the following:

(show work)

$$(a) (+8) - (+5) = \\ (+8) \cancel{+} (-5) = +3$$

$$(b) (-6) - (-4) = \\ (-6) \cancel{+} (+4) = -2$$

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

$$(d) (+5) - (-2) = \\ (+5) \cancel{+} (+2) = +7$$

$$(e) (-4) - (+4) = \\ (-4) \cancel{+} (-4) = -8$$

$$(f) (+2) - (-3) = \\ (+2) \cancel{+} (+3) = +5$$

$$(g) (-5) - (-6) = \\ (-5) \cancel{+} (+6) = +1$$

$$\begin{aligned} & (+7) + (-2) - (-3) \\ & \quad \underbrace{\qquad\qquad}_{(+5)} \quad \quad \quad - (-3) \\ & = (+5) \quad \quad \quad \downarrow^{\text{add opp}} \\ & = (+5) \quad + (+3) \\ & = +8 \end{aligned}$$

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

# Class/Homework

Quiz On Rules

sheet 283

Adding, Subtracting, Multiplying, Dividing

#1 all

#~~1-10~~ Questions (Show work)

- #2 a b e
- #3 a to f
- #6 a b c d

Warm Up Quiz tomorrow on rules of add, subtract, multiply and divide

## Homework Solutions

sheet 235

3 a)  $(+5) + \underline{+3} = +8$

b)  $\underline{-1} + (-3) = -4$

c)  $(+3) + \underline{-2} = +1$

d)  $(-5) + \underline{+2} = -3$

e)  $(+2) + \underline{-1} = +1$

f)  $\underline{+6} + (-6) = 0$

4) a)  $(+2) + (+3) = +5$

b)  $(-3) + (+4) = +1$

c)  $(-4) + (-5) = -9$

d)  $(+8) + (-1) = +7$

e)  $(-10) + (-6) = -16$

f)  $(+4) + (-13) = -9$

5) a)  $(-4) + (+7) = +3$

b)  $(0) + (-6) = -6$

## Attachments

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Grade 8 Math SHEET 235.docx

Grade 8 Math SHEET 283 Subtraction review.docx