

$$\bullet = +1$$

$$O = -1$$

WARM UP GRADE 8
Wednesday, Sept. 21
 Grade 7 Review



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°C at lunch then drops 4° . 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 2016

Homework Sheet 235 # 1-7

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



Homework Solutions

$$= +6$$

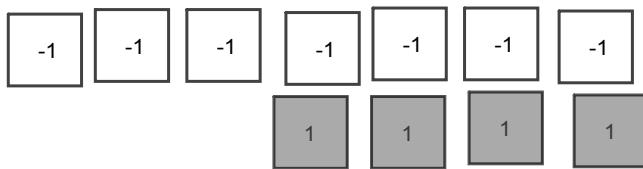
b) $(-1) + (+8)$



$$= +7$$

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

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



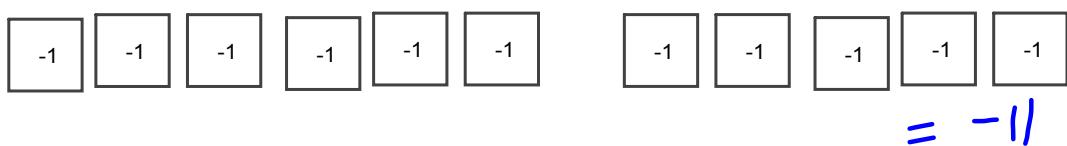
$$= -3$$

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



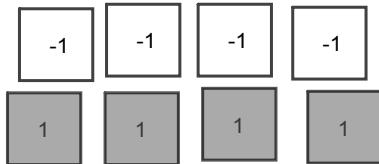
$$= -4$$

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



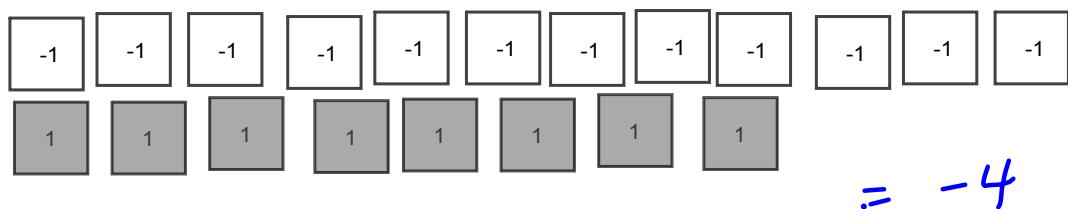
$$= -11$$

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



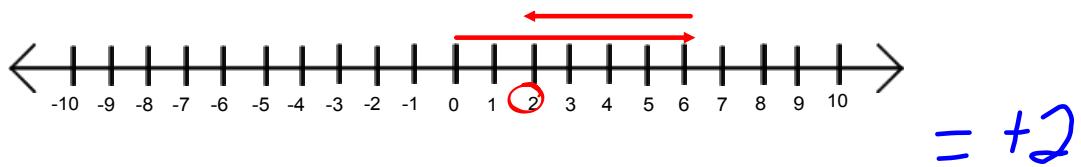
$$= 0$$

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

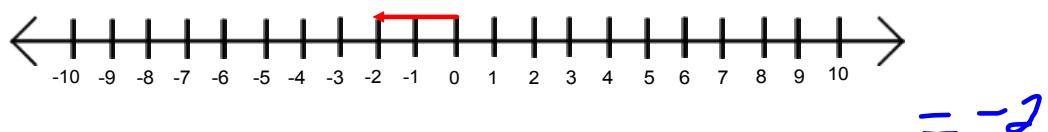


$$= -4$$

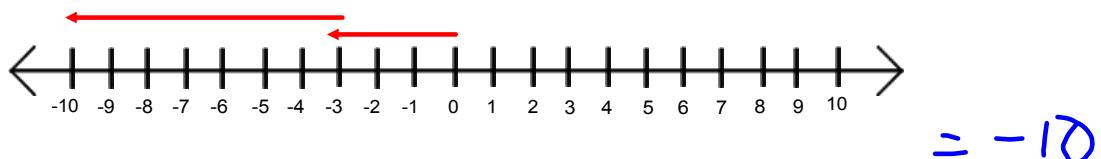
2 a) $(+6) + (-4)$

Homework Solutions
 Sheet 235


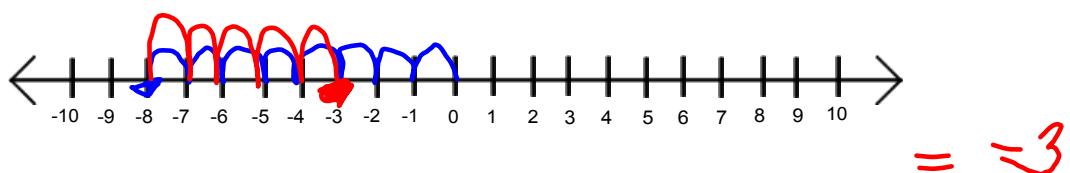
b) $0 + (-2)$



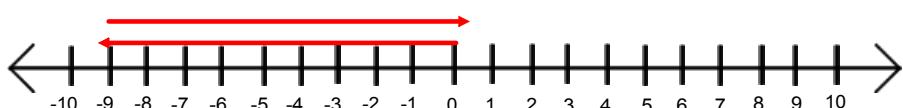
c) $(-3) + (-7)$



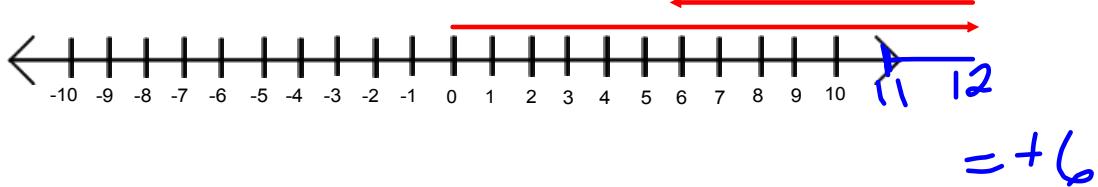
d) $(-8) + (+5)$



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

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

6 a) $(+7) + (-5) + (+6)$ **Homework Solution**
 $\underbrace{(+2)}_{(+2)} + \underbrace{(+6)}_{(+6)} = +8$ sheet 235

b) $(-9) + (+2) + (-3)$
 $\underbrace{-7}_{-7} + \underbrace{(-3)}_{(-3)} = -10$

c) $(+1) + (-6) + (+4) + (-7)$
 $\underbrace{(+5)}_{(+5)} + \underbrace{(-13)}_{(-13)} = -8$

d) $(-3) + (+5) + (-1) + (+8)$
 $\underbrace{(+2)}_{(+2)} + \underbrace{(-1)}_{(-1)} + \underbrace{(+8)}_{(+8)} = +9$

e) $(+12) + (-9) + (+11) + (-20)$
or $(+23) + (-29)$

-6

f) $(-13) + (+25) + (-5) + (-17)$
 $\underbrace{(+12)}_{(+12)} + \underbrace{(-5)}_{(-5)} + \underbrace{(-17)}_{(-17)} = -10$

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

Notes

Subtracting Integers using modeling

$$\begin{array}{c} \text{model} \\ (-2) - (-5) \end{array} \quad \begin{array}{c} \text{remove} \\ \downarrow \end{array} \quad \begin{array}{c} \text{May need to add zero pairs in order to subtract} \\ -5 \leftarrow 5 \text{ unshade} \end{array}$$

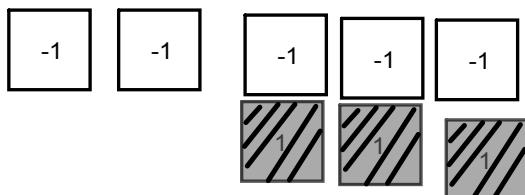
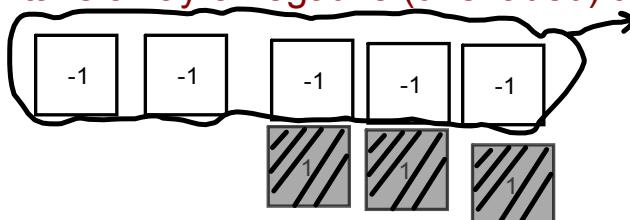
2 unshaded

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.

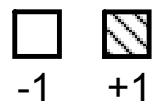
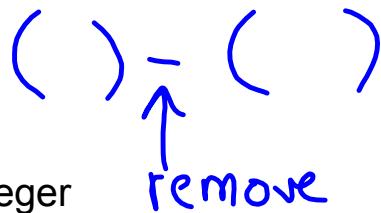
Sept 2) We add ZERO pairs without changing the value.

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

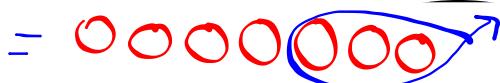
*if there are not enough to remove then add zero pairs of tiles and it does not change the question

$$\text{Ex1)} \quad (-7) - (-3) = -4$$

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

=

To show removing, circle and point arrow away



$$= 0000$$

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

remove 2 shaded

Step 1) Start with -5 then ask yourself if you can remove ?

=

To show removing, circle and point arrow away



Step 2)

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



Step 3) Now remove positive tiles

= -7

left 00000000

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

\uparrow \uparrow
 add opposite

$$(-5) + (-2) \quad \text{use addition rules}$$
$$-7$$

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

Subtracting Integers

→ add the
opposite

→ switch
subtracting
sign to
addition

→ switch
sign after
subtraction
to opposite

$$\begin{aligned} & (-7) - (-3) \\ & \quad \downarrow \text{add} \quad \downarrow \text{opp} \\ & = (-7) + (+3) \\ & = (-4) \end{aligned}$$

Your Turn

Subtracting Integers using modeling

May need to add zero pairs in order to subtract

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

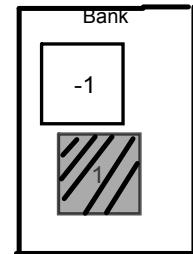
$$\begin{array}{r} (+5) \\ \downarrow \text{add} \quad \downarrow \text{opp} \\ (+5) + (-3) \\ +2 \end{array}$$

$$\begin{aligned} &= \bullet \bullet \cancel{\bullet \bullet} \bullet \\ &= \bullet \bullet \end{aligned}$$

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

$$\begin{aligned} &= (-8) - (-4) \\ &= (-8) \downarrow \text{add} + (+4) \\ &= (-4) \end{aligned}$$

$$\begin{aligned} &= \cancel{\bullet \bullet \bullet} \bullet \bullet \bullet \\ &= \bullet \bullet \bullet \end{aligned}$$



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

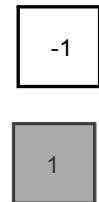
$$\begin{aligned} &= (-6) - (-5) \\ &= (-6) \downarrow \text{add} + (+5) \end{aligned}$$

$$\cancel{\bullet \bullet \bullet} \bullet \bullet$$

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

$$\approx (-1)$$

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



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

$$\bullet \circlearrowleft \cancel{\bullet \bullet} = +4$$

$$(+1) + (+3) =$$

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)

$$(a) (+8) - (+5) = +3$$

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

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

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

$$(c) (-7) - (-6) = -1$$

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

$$(d) (+5) - (-2) = +7$$

$$(+5) + (+2) = +7$$

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

$$(-4) + (-4) = -8$$

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

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

$$(g) (-5) - (-6) = +1$$

$$(-5) + (+6) = +1$$

$$\begin{array}{r} (+7) + (-2) - (-3) \\ \underbrace{}_{(+5)} \quad \overline{-} \underbrace{(-3)}_{\substack{\downarrow \text{add opp}}} \\ (+5) \quad + (+3) \\ + 0 \end{array}$$

Class/Homework

Quiz On Rules

sheet 283

Friday

Adding, Subtracting, Multiplying, Dividing



1 to 6 all Questions (Show work)

$$\begin{array}{ll} 1) (-3) \times (+5) = \underline{\quad} & 2) (-4) \times (-7) = \underline{\quad} \\ 3) (-28) \div (-4) = \underline{\quad} & 4) (-7) + (+5) = \underline{\quad} \end{array}$$

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

Attachments

Grade 8 Math SHEET 235.docx

Grade 8 Math SHEET 283 Subtraction review.docx