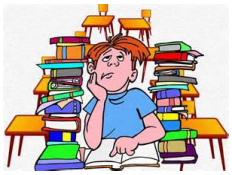
● = +1
○ = -1

# Warm Up Grade 8

## 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°C.

Homework Sheet 235 # 1-7

Homework Solutions

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

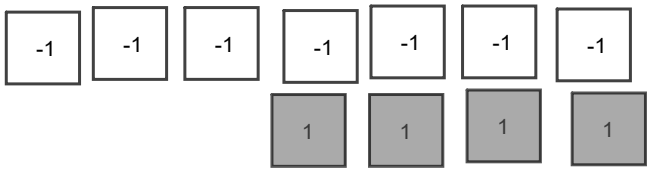

= +6

b) (-1) + (+8)


= +7

c) 0 + (-5) = -5

d) (-7) + (+4)

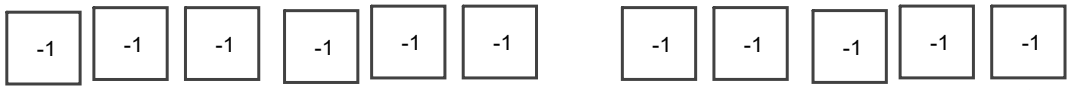



= -3

e) (-2) + (-2)

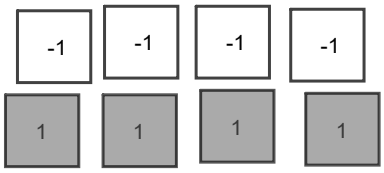

= -4

f) (-6) + (-5)



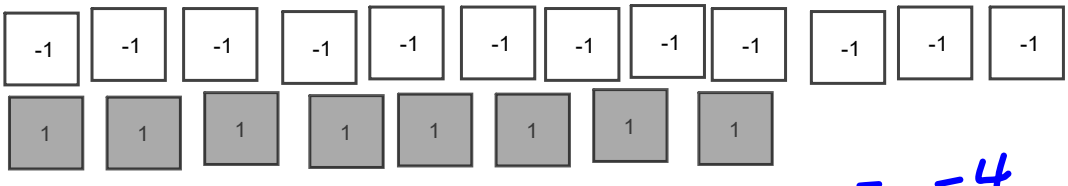

= -11

g) (+4) + (-4)




= 0

h) (-12) + (+8)




= -4

Homework Solutions
Sheet 235

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


= +2

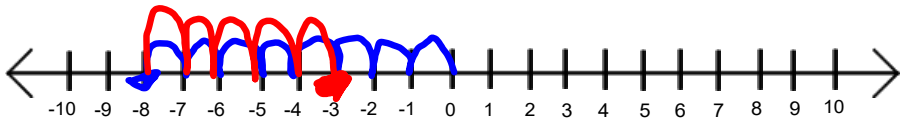
b) 0+(-2)


= -2

c) (-3)+(-7)


= -10

d) (-8)+(+5)



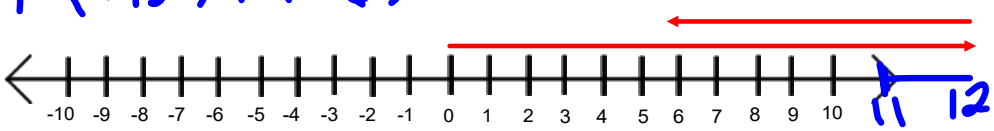

= -3

e) (-9)+(+9)


= 0

f) (+12)+(-6)

(+12)+(+6) = +18




= +6

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

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

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

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

c) $(+3)+(-2)=+1$

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

e) $(+2)+(-1)=+1$

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

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

**Homework Solution**
sheet 235

6 a) $(+7) + (-5) + (+6)$

$(+2) + (+6) = +8$

b) $(-9) + (+2) + (-3)$

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

c) $(+1) + (-6) + (+4) + (-7)$

$(+5) + (-13) = -8$

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

$(+2) + (-1) + (+8)$

$(+1) + (+8)$

$+9$

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

or (+23) + (-29)

-6

f) $(-13) + (+25) + (-5) + (-17)$

$(+12) + (-5) + (-17)$

$+7 + (-17)$

$-10$

c) $(+1) + (-6) + (+11)$

$(-5) + (+11)$

$+6$

# Subtracting Integers using modeling

Notes

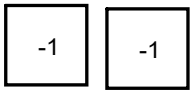
May need to add zero pairs in order to subtract

model remove -5 ← 5 unshaded

(-2) - (-5)

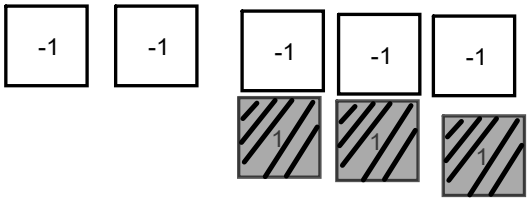
2 unshaded

Step 1) Model the first integer

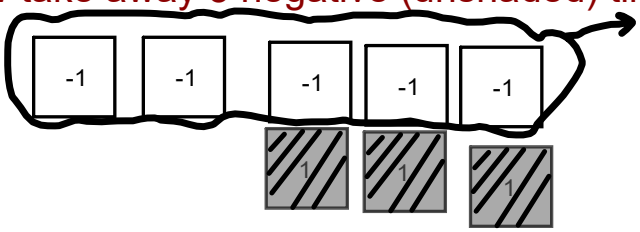



There are not enough tile to take away -5. To take away -5, we need 3 more negative tiles.

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

( ) − ( )

remove

-1 +1

- 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

Ex1) (-7) - (-3) = (-4)

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

=

To show removing, circle and point arrow away

⇒ 0000

Ex2) (-5) - (+2) = (-7)

Step 1) Start with 5 negative tiles, then ask yourself if you can remove 2 positive tiles?

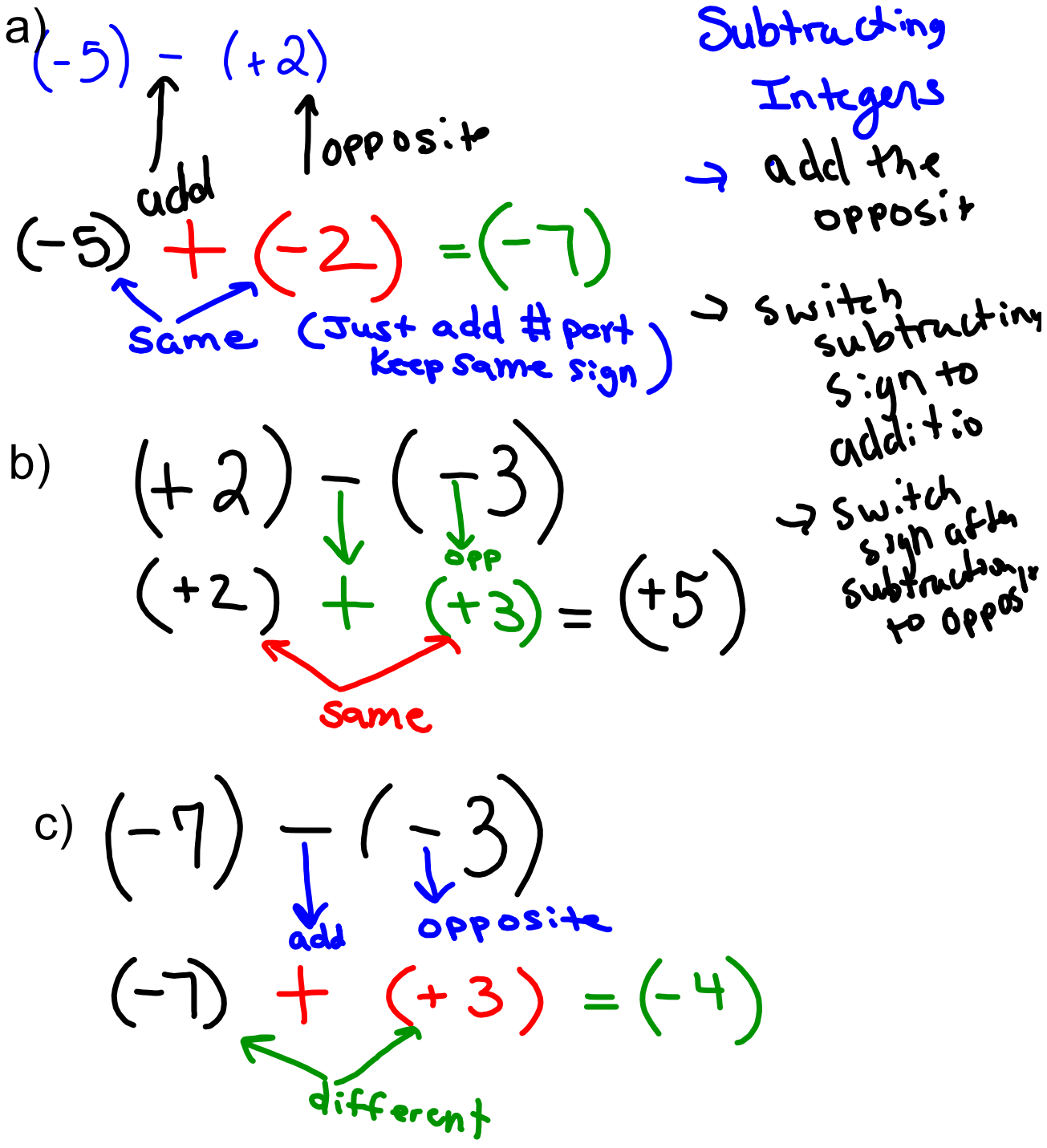
To show removing, circle and point arrow away

Step 2)

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

Step 3) Now remove 2 positive tiles

=(-7)


a)
(-5) - (+2)
add
opposite
(-5) + (-2) = (-7)
same
(Just add # part
keep same sign)
Subtracting Integers
→ add the opposite
→ switch subtracting sign to addition
→ switch sign after subtraction to opposite
b)
(+2) - (-3)
opp
(+2) + (+3) = (+5)
same
c)
(-7) - (-3)
add
opposite
(-7) + (+3) = (-4)
different

Your Turn

# Subtracting Integers using modeling

May need to add zero pairs in order to subtract

(+5) - ( +3)

add opp

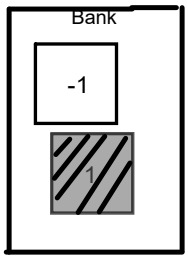
(+5) + (-3) = (+2)

diff

(-8) - (-4)

(-8) + (+4)

= (-4)




(-6) - ( -5)

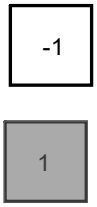
(-6) + (+5)

= (-1)

(-4) - (-6)

(-4) + (+6)

= (+2)




(+2) - (+5)

(+2) + (-5)

= (-3)

(+1) - ( -3)

(+1) + (+3)

= (+4)

## 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) + (-5) = (+3)

(b) (-6) - (-4) =

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

(c) (-7) - (-6) =

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

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

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

(e) ( -4) - (+4) =

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

(g) (-5) - (-6) =

BA DM AS

a)

$(+7) + (-2) - (-3)$

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

add, opp

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

$= (+8)$

b)

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

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

$= (+4) + (+3)$

$= (+7)$


**Quiz On Rules**

sheet 283 Adding, Subtracting, Multiplying, Dividing

#1, 2, 3, #6a

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