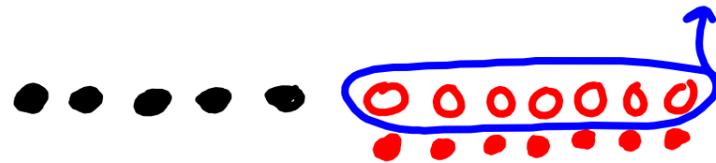




Warm Up Grade 7

Date: Feb 17

Use tiles to represent $(+5) - (-7)$



5 shaded
can I remove
7 unshaded? No



$(+5) - (-7) = (+12)$ Need zero pairs

Use tiles to represent $(-7) - (+5)$



$(-7) - (+5) = (-12)$

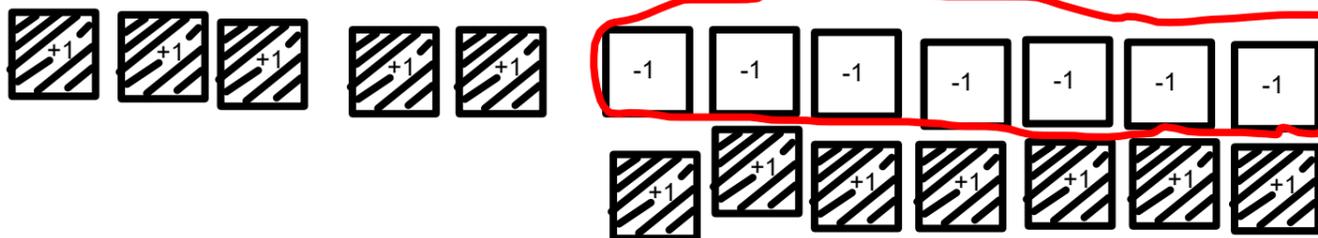
What do you notice when we reverse the order in which integers are subtracted?
ORDER Matters

Warm Up Grade 7

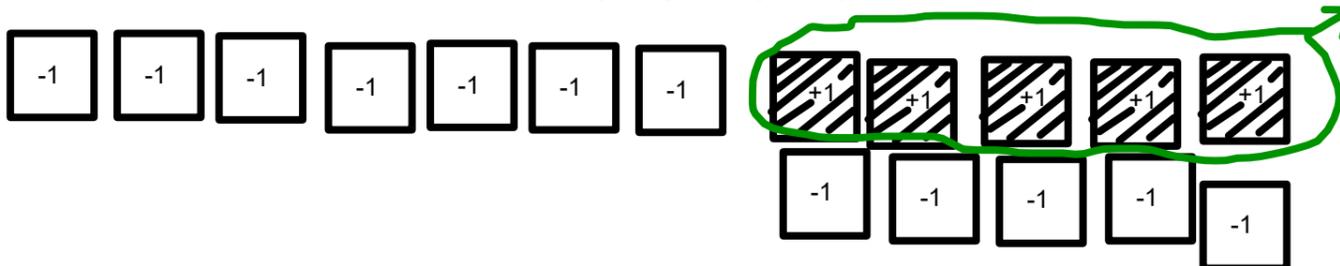


Solutions

Use tiles to represent $(+5) - (-7) = +12$



Use tiles to represent $(-7) - (+5) = -12$



What do you notice when we reverse the order in which integers are subtracted?

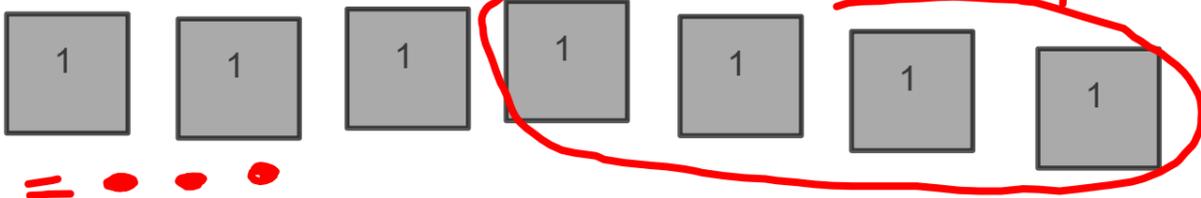
When we reverse the order in which we subtract two integers, the answer is the opposite integer.

Homework

Solutions

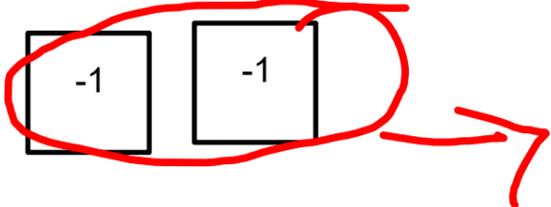
pg 69

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



+3

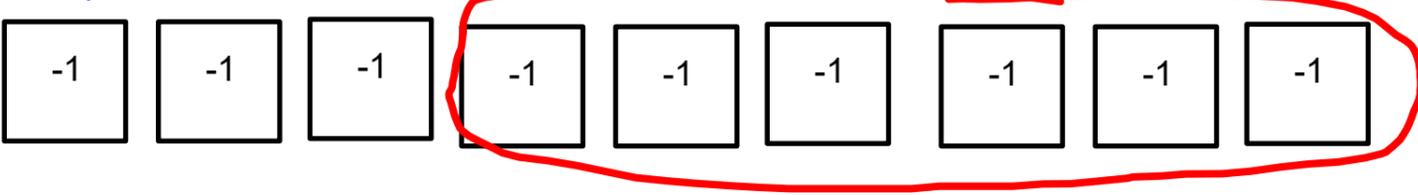
b) $(-2) - (-2)$



= zero

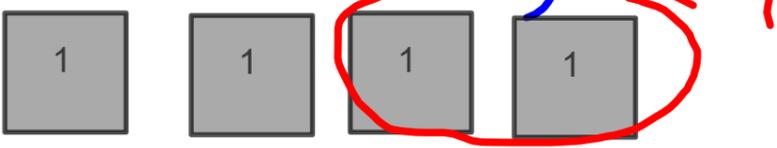
0

c) $(-9) - (-6)$



-3

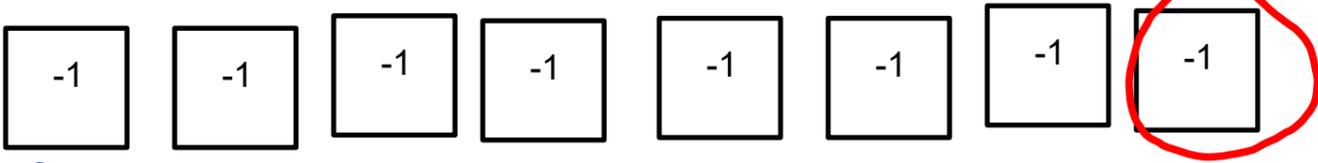
d) $(+4) - (+2)$



+2

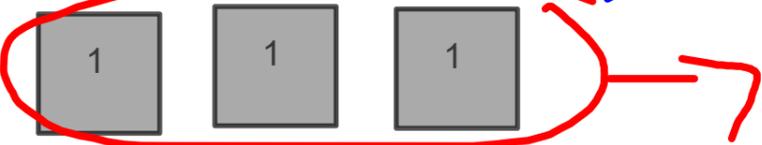


e) $(-8) - (-1)$



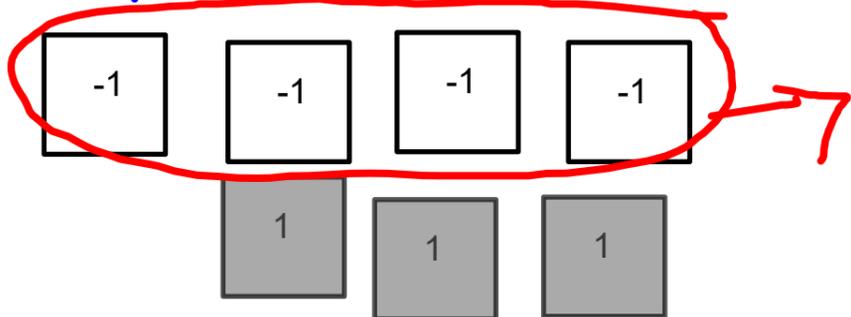
-7

f) $(+3) - (+3)$

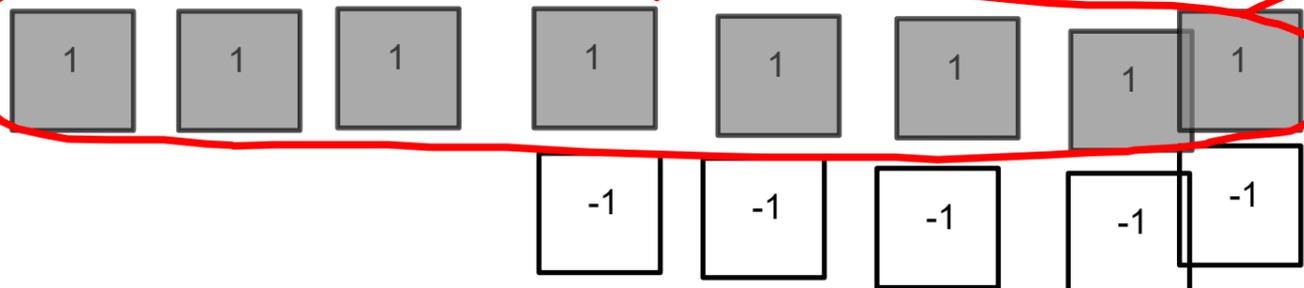


0

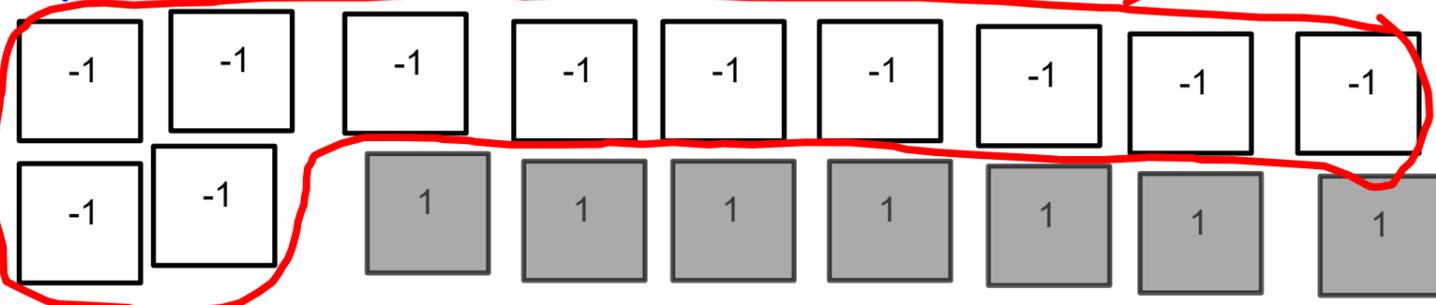
2a) $(-1) - (-4)$



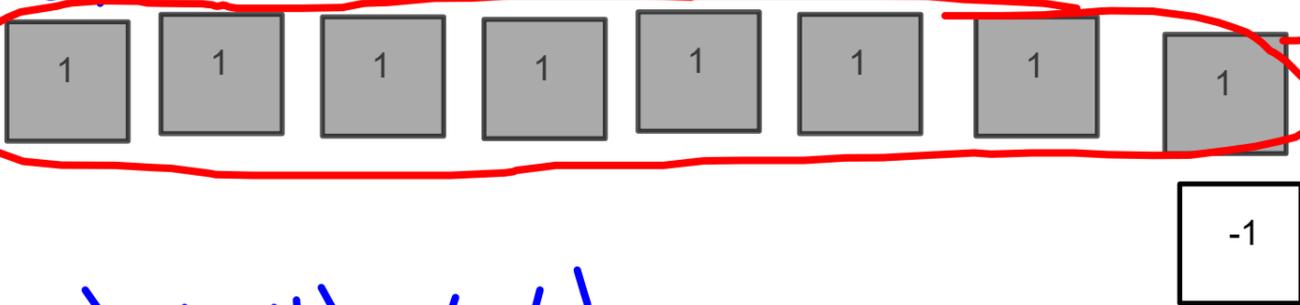
b) $(+3) - (+8)$



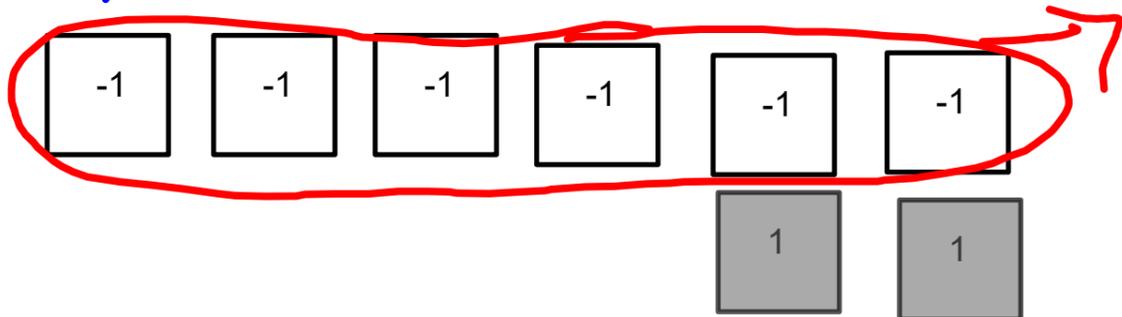
c) $(-4) - (-11)$



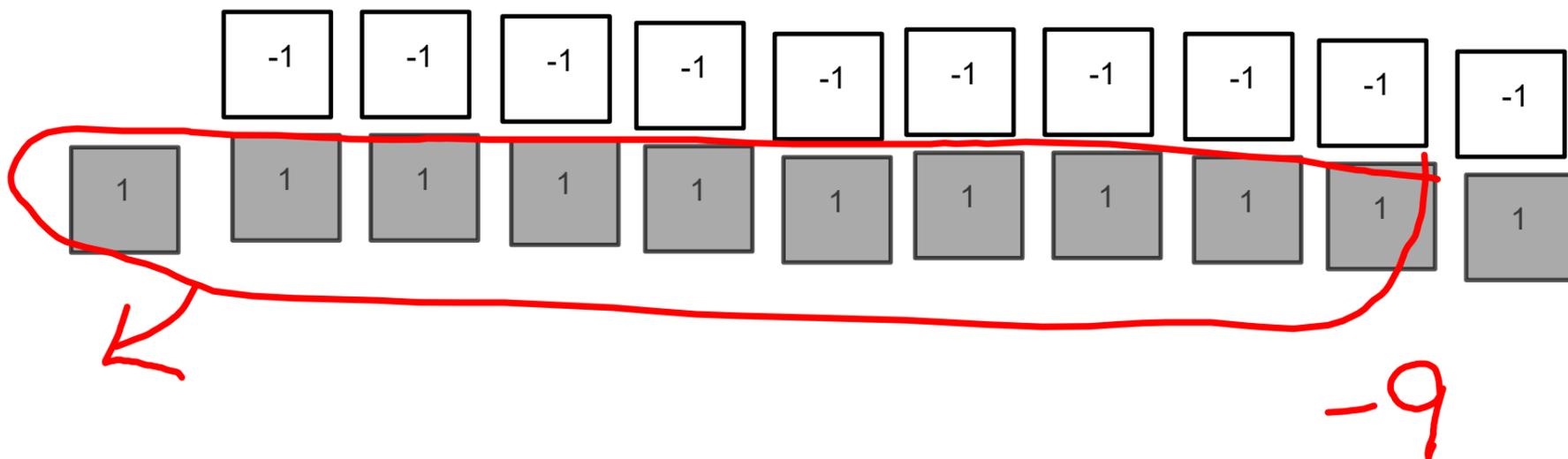
d) $(+7) - (+8)$



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



f) $(+1) - (+10)$



Homework

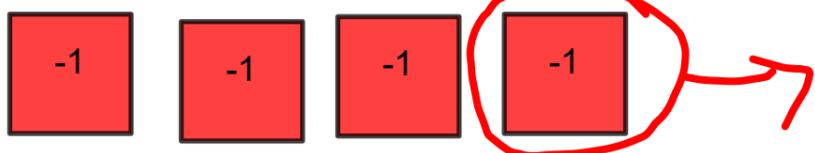
pg. 69 # 3,4,5,7,9,10,12,13

Try to figure the rule for subtracting integers

Homework

Solutions

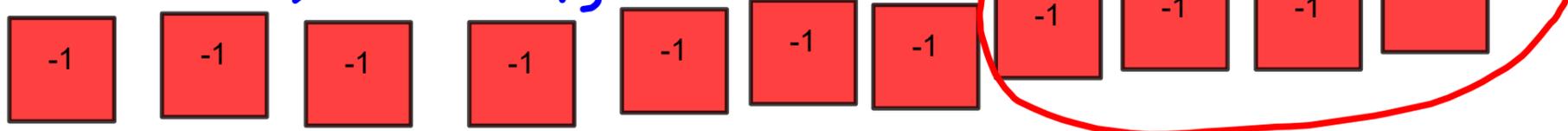
3a) $(-4) - (-1)$



-3

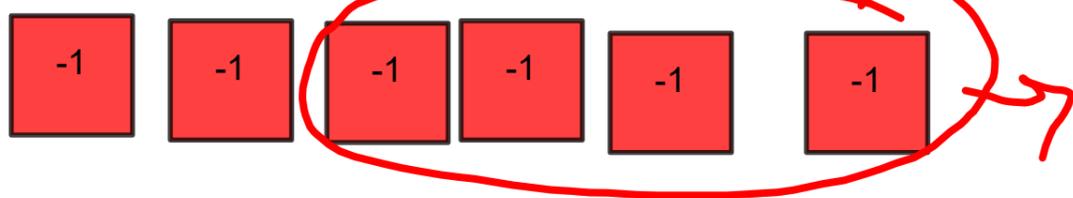
b) $(+8) - (+3) = +5$

c) $(-11) - (-4)$



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

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



-2

f) $(+10) - (+1) = +9$

4a) $(+4) - (-7)$

A number line with 14 boxes. The first 4 boxes contain '1' (yellow), and the next 7 boxes contain '-1' (red). A red oval circles the 7 '-1' boxes, with an arrow pointing to the right. The result '+11' is written in red to the right.

b) $(-2) - (+8)$

A number line with 14 boxes. The first 2 boxes contain '-1' (red), and the next 8 boxes contain '1' (yellow). A blue oval circles the 8 '1' boxes, with an arrow pointing to the right. The result '-10' is written in blue to the right.

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

A number line with 14 boxes. The first 9 boxes contain '-1' (red), and the next 5 boxes contain '1' (yellow). A blue oval circles the 5 '1' boxes, with an arrow pointing to the right. The result '= -14' is written in blue to the right.

d) $(+6) - (-8)$

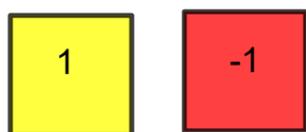
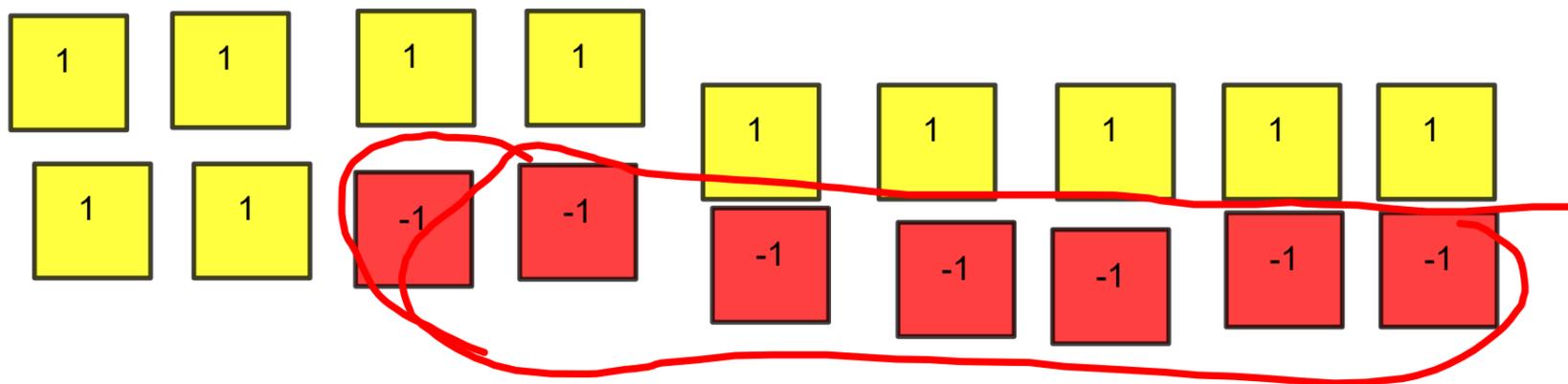
A number line with 14 boxes. The first 3 boxes contain '1' (yellow), and the next 8 boxes contain '-1' (red). A blue oval circles the 8 '-1' boxes, with an arrow pointing to the right. The result '+14' is written in blue to the right.

e) $(-3) - (+6)$

A number line with 14 boxes. The first 3 boxes contain '-1' (red), and the next 6 boxes contain '1' (yellow). A blue oval circles the 6 '1' boxes, with an arrow pointing to the right. The result '= -9' is written in blue to the right.

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

A number line with 14 boxes. The first 5 boxes contain '-1' (red), and the next 7 boxes contain '1' (yellow). A blue oval circles the 7 '1' boxes, with an arrow pointing to the right. The result '-12' is written in blue to the right.

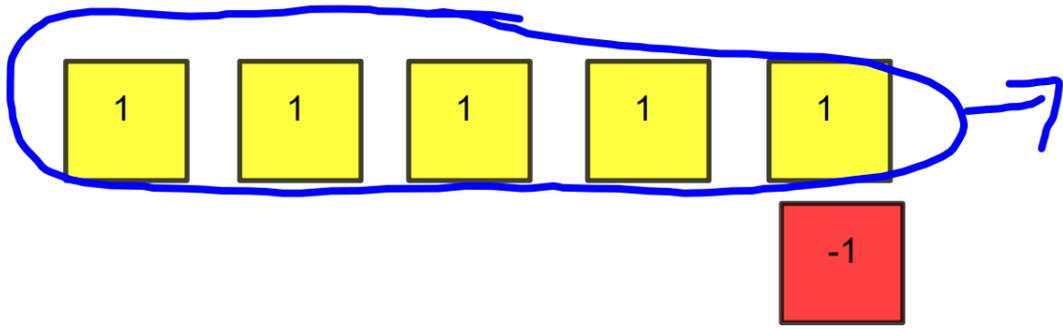


$$(+4) - (-7)$$

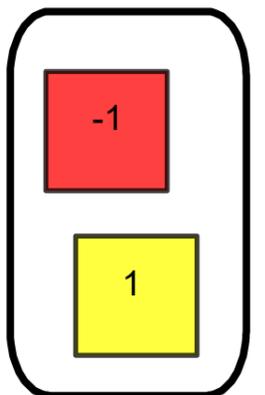
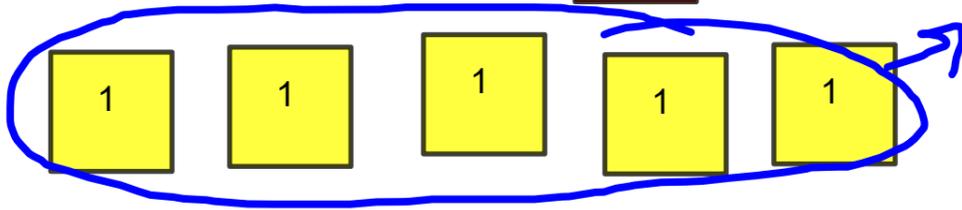
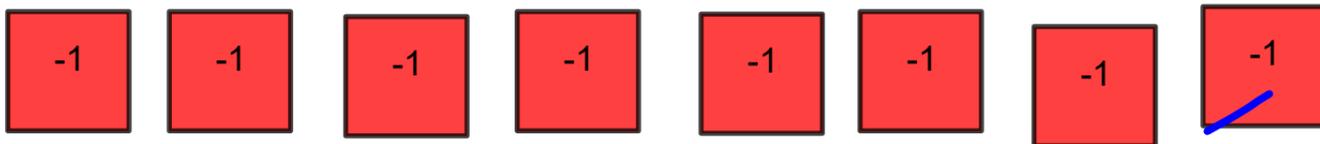
$$5a) (+4) - (+5) = -1$$

Homework

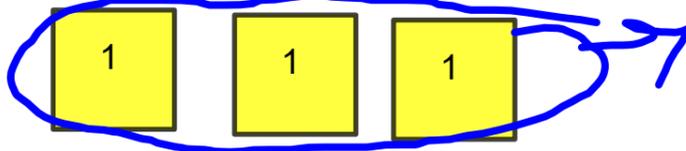
Solutions



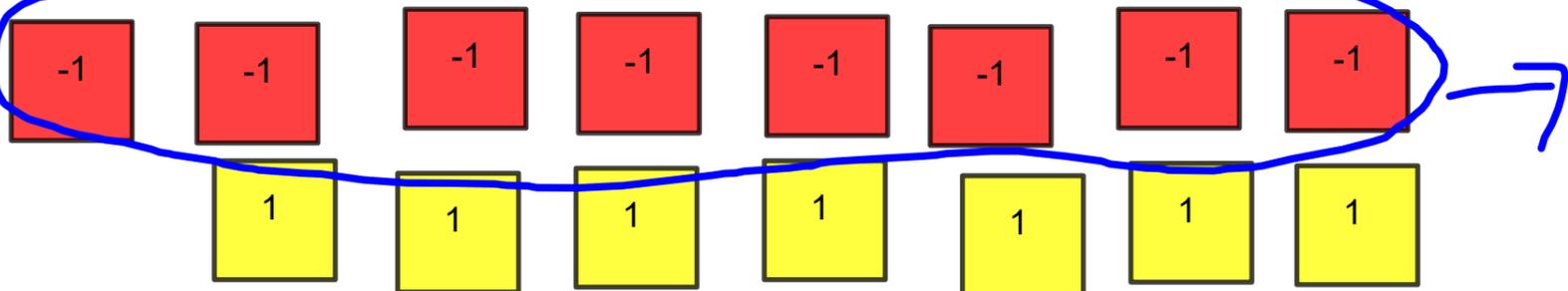
$$b) (-3) - (+5) = -8$$



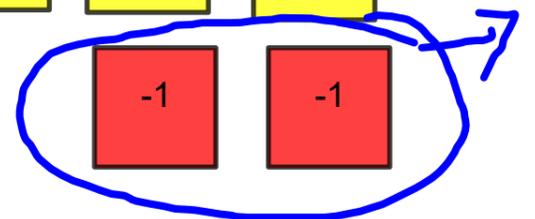
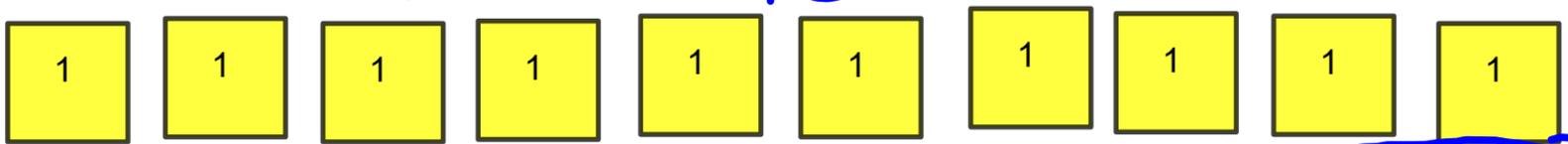
$$c) (-4) - (+3) = -7$$



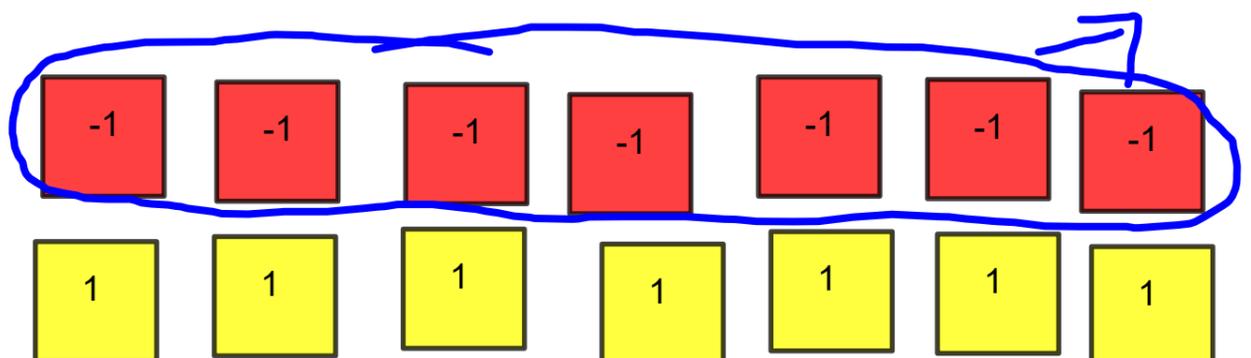
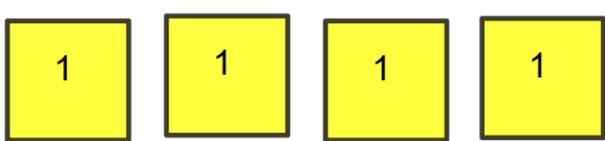
$$d) (-1) - (-8) = +7$$



$$e) (+8) - (-2) = +10$$



$$f) (+4) - (-7) = +11$$



Rules for Subtracting Integers

When you are subtracting integers, you can change the subtraction sign to ^[SEP]addition, then change the number after the subtraction sign to its ^[SEP]opposite. Then simply use your rules for adding integers. The number ^[SEP]before the subtraction sign never changes.

Another way of saying the above is to "Add the Opposite"

Examples:

$$\begin{aligned} (+9) - (-2) \\ (+9) + (+2) = +11 \end{aligned}$$

$$\begin{aligned} (-15) - (+5) \\ (-15) + (-5) = -20 \end{aligned}$$

$$\begin{aligned} (+12) - (+16) \\ (+12) + (-16) = -4 \end{aligned}$$

$$\begin{aligned} (+7) - (-5) \\ (+7) + (+5) = +12 \end{aligned}$$

$$\begin{aligned} (-2) - (-9) \\ (-2) + (+9) = +7 \end{aligned}$$

$$\begin{aligned} (-10) - (-8) \\ (-10) + (+8) = \end{aligned}$$

Whenever you do subtracting integers questions you have to show the ^[SEP]second step as done above.

Try some

$$\begin{aligned} \text{(a)} \quad (-6) - (+3) \\ = (-6) + (-3) \end{aligned}$$

$$\begin{aligned} \text{(c)} \quad (+10) - (+12) \\ = (+10) + (-12) \end{aligned}$$

$$\begin{aligned} \text{(e)} \quad (+3) - (+10) \\ = (+3) + (-10) \end{aligned}$$

$$\begin{aligned} \text{(g)} \quad (+7) - (-6) \\ = (+7) + (+6) \\ = +13 \end{aligned}$$

$$\begin{aligned} \text{(b)} \quad (+7) - (-5) \\ = (+7) + (+5) \end{aligned}$$

$$\begin{aligned} \text{(d)} \quad (-3) - (-8) \\ = (-3) + (+8) \end{aligned}$$

$$\begin{aligned} \text{(f)} \quad (-12) - (-3) \\ = (-12) + (+3) \end{aligned}$$

$$\begin{aligned} \text{(h)} \quad (+20) - (+15) \\ = (+20) + (-15) \\ = +5 \end{aligned}$$

Similar to test question

Add to your notes

Use tiles to help answer the following:

$$(-7) - (\underline{\quad}) = (+4)$$

$$\begin{array}{c} \uparrow \\ (-11) \end{array}$$

final is \oplus



check

$$(-7) - (-11)$$

$$(-7) + (+11) = +4$$

USE RULES FOR ALL (No tiles or Number lines

Only add
Opposite

Homework pg. 69-70 #~~4~~, 5, 7ai, 10,12, 13ab

pg 73 # 1,#3 (using rules instead of number line).

$$7a) \text{(i)} (+3) - (+1) = +2$$

$$\begin{array}{l} (+1) - (+3) \\ (+1) + (-3) = -2 \end{array}$$

$$\text{(ii)} \begin{array}{l} (-3) - (-2) \\ (-3) + (+2) = -1 \end{array}$$

$$\begin{array}{l} (-2) - (-3) \\ (-2) + (+3) = +1 \end{array}$$

$$\text{(ii)} \begin{array}{l} (+4) - (-3) \\ (+4) + (+3) = +7 \end{array}$$

$$\begin{array}{l} (-3) - (+4) \\ (-3) + (-4) = -7 \end{array}$$

7(b) The order in which you subtract integers is important

$(+3) - (+1)$ is not the same as $(+1) - (+3)$

9. Subtraction question with answer:

$$a) +2$$

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

$$(+10) - (+8)$$

$$b) (-3)$$

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

$$(-8) - (-5)$$

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

$$c) +5$$

$$(+12) - (+7)$$

$$(+9) - (+4)$$

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

$$d) -6$$

$$(-8) - (-2)$$

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

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

$$10 \text{ a) } (+3) - (-1)$$
$$(+3) + (+1)$$
$$+4$$

Greater

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

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

Greater

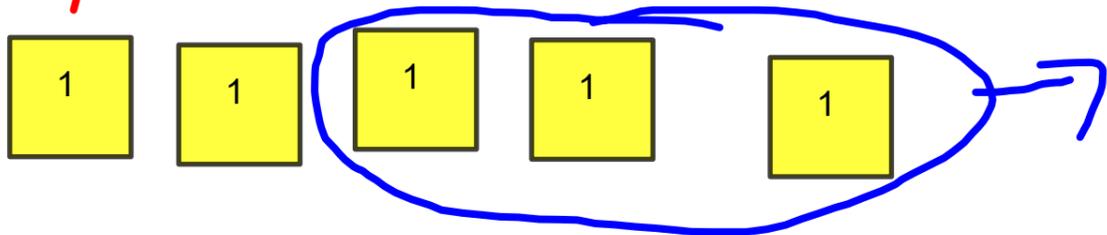
$$(+4) - (+5)$$
$$(+4) + (-5)$$
$$-1$$

$$12 \text{ a) } (+4) - \boxed{} = +3$$
$$+1$$

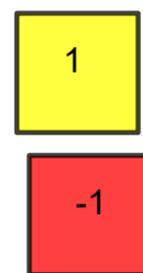
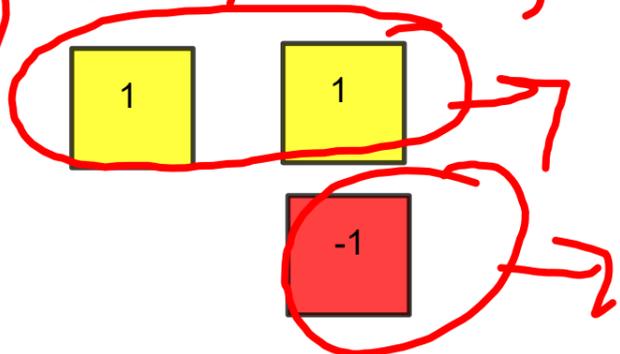
$$b) (+3) - \boxed{} = -1$$
$$+4$$

$$c) \boxed{} - (+1) = +4$$
$$+5$$

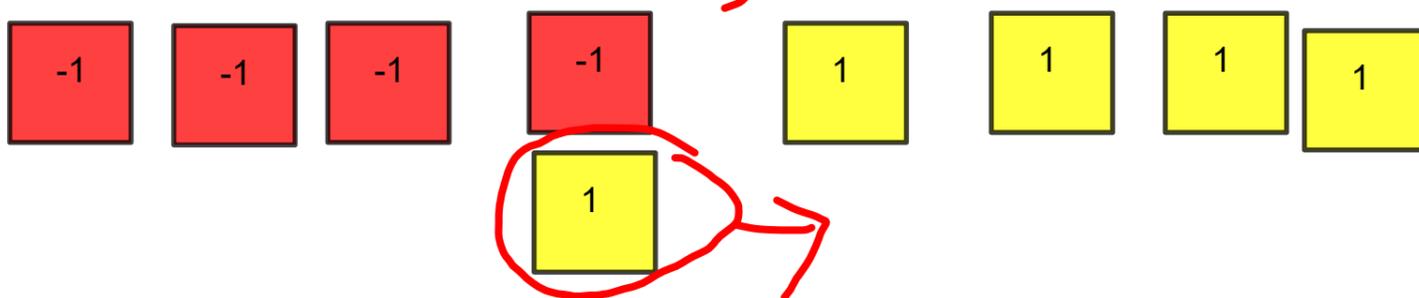
$$13 \quad a) (+4) + (+1) - (+3) = +2$$



$$b) (+1) - (+2) - (-1) = 0$$



$$c) (-3) - (+1) + (+4) = 0$$



$$d) (-2) - (-4) + (-1)$$

$$(-2) + (+4) + (-1) = +1$$

$$e) (+2) - (+1) - (+4)$$

$$(+2) + (-1) + (-4) = -3$$

$$f) (+1) - (+2) + (+1)$$

$$(+1) + (-2) + (+1) = 0$$