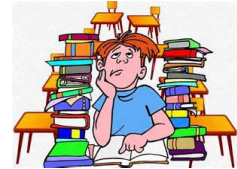


Warm Up Grade 8

Grade 7 Review of Adding Integers



Note on division: $(+15) \div (+3) = (+5)$
 Dividend Divisor Quotient

REVIEW

$() + () = ()$

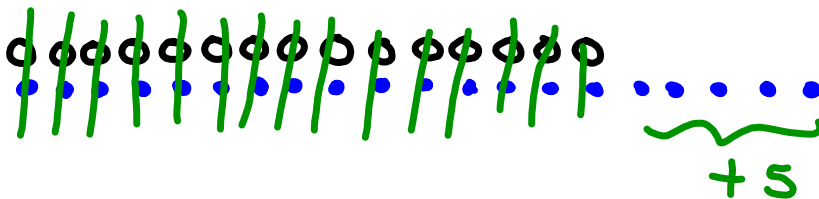
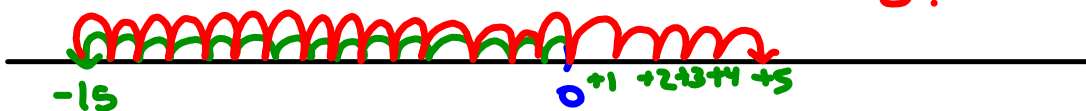
Represent the following with a addition statement of integers, then find the sum:

a) Karen lost \$15 but found \$20

always show work

$(-15) + (+20) = (+5)$
 Top Bottom

Karen has a profit of \$5.



Page 87-88 #4, #5(a,c,e,g,i), #8(a,d), #9(a,c), #10(a,b,c,d), #11(a,b), #12(a,b), #15(a,b,d), #16

#4)a) -9 b) +2 c) -12 d) +5

Homework
Solutions

5) a) $(+12) \div (+4) = (+3)$

c) $(-18) \div (+9) = (-2)$

e) $(+72) \div (-8) = (-9)$

g) $(-14) \div (+1) = (-14)$

h) $(-27) \div (-3) = (+9)$

Page 87-88 #4, #5(a,c,e,g,i), #8(a,d), #9(a,c), #10(a,b,c,d), #11(a,b), #12(a,b), #15(a,b,d), #16

pg 88

$$8. (-6) \times (+5) = -30$$

$$(-30) \div (+5) = -6$$

$$(-30) \div (-6) = +5$$

Homework
Solutions

$$b) (+7) \times (+6) = +42$$

$$+42 \div +6 = +7$$

$$+42 \div (+7) = +6$$

$$c) (+9) \times (-4) = -36$$

$$-36 \div (-4) = +9$$

$$-36 \div (+9) = -4$$

$$d) (-4) \times (-8) = +32$$

$$+32 \div (-4) = -8$$

$$+32 \div (-8) = -4$$

$$9. a) \frac{-20}{-5} = +4$$

$$b) \frac{+21}{-7} = -3$$

$$c) \frac{-36}{+4} = -9$$

$$d) \frac{0}{-8} = 0$$

Page 87-88 #4, #5(a,c,e,g,i), #8(a,d), #9(a,c), #10(a,b,c,d), #11(a,b), #12(a,b), #15(a,b,d), #16

$$10. a) +25 \div \underline{+5} = +5$$

$$b) \underline{-90} \div (-9) = +10$$

$$c) (-63) \div \underline{+9} = -7$$

$$d) \underline{-21} \div -3 = +7$$

$$e) \underline{-60} \div (+5) = -12$$

$$f) \underline{+49} \div (-7) = -7$$

$$g) \underline{-48} \div -6 = +8$$

$$h) \underline{+44} \div (-4) = -11$$

Homework
Solutions

$$11. -56 \div (-7) = +8$$

She borrowed money for 8 days

$$12. (-15) \div (+5) = -3$$

The temp. dropped 3° each hour.

$$13. (-132) \div (+12) = -11$$

Her balance dropped \$11 each week.

$$14. (-24) \div (-6) = +4$$

She lost 6 points on each of the 4 performances.

Page 87-88 #4, #5(a,c,e,g,i), #8(a,d), #9(a,c), #10(a,b,c,d), #11(a,b), #12(a,b), #15(a,b,d), #16

16. Suppose you divide two integers. The quotient is an integer.
- When is the quotient:

Homework

Solutions

- (a) less than both integers

$$(+ 8) \div (+ 4) = + 2 \text{ - but not always true}$$

$$(+ 8) \div (- 2) = - 4$$

$$(+ 36) \div (- 3) = - 12$$

When you divide a pos. by a neg with both it depends on the factors.

- (b) greater than both integers

When you divide a negative by a negative. Ex $(- 10) \div (- 5) = + 2$

- (c) between the two integers

$$(- 12) \div (+ 3) = - 4 \quad (- 20) \div (+ 2) = - 10$$

When you divide a negative by a positive

- (d) equal to +1

When you divide the same integer by itself. Ex $(- 24) \div (- 24) = + 1$

- (e) equal to -1

- When you divide opposite integers

$$(+ 5) \div (- 5) = - 1$$

- (f) equal to 0

- When 0 is divided by the integer

$$\text{Ex } 0 \div (+ 5) = 0 \quad , \quad 0 \div (- 8) = 0$$

15 a) $+1, -3, +9, -27, +81, -243, +729$

multiply by (-3)
 (add 6) $\times (-1)$

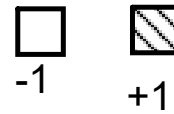
b) $+6, -12, +18, -24, +30, -36, +42$

$6 \times 1, 6 \times 2, 6 \times 3, 6 \times 4, 6 \times 5, 6 \times 6$

d) $(+128), (-64), (+32), (-16), +8, -4, +2$

$\div 2$

Rules From Grade 7 Integer Unit

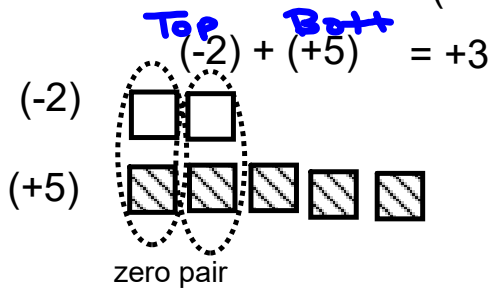


Unit 2: Integers

○ ⇒ unshaded ⇒ negative
 ● ⇒ shaded ⇒ positive

Adding with tiles

-When you add integers you represent each integer in the addition statement. (Remove zero pairs and state answer)



Adding with Number lines

- Always start at zero
- Count the bumps in the road for the first integer

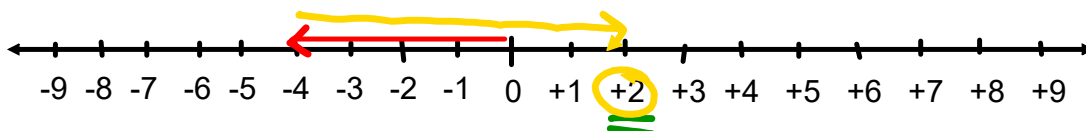
Move to the right ⇒ if positive

Move to the left ⇐ if negative

- When adding the second integer we count the bumps on the road in the direction given from where we ended with the first integer.

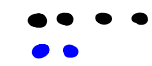
-Where you end up is the answer.

$$\underbrace{(-4)}_{\text{left}} + \underbrace{(+6)}_{\text{right}} = (+2)$$



Modeling Integer Addition

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

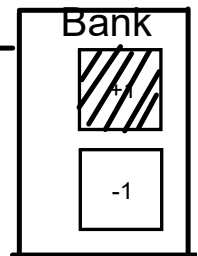


$$(-3) + (-3) = (-6)$$

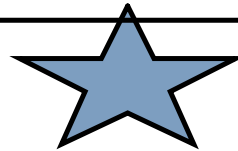


$$(-2) + (-5) = -7$$

Same

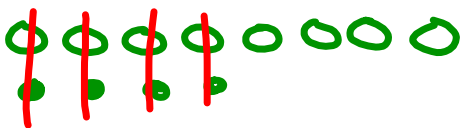


$$(+4) + (-3) = (+1)$$



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

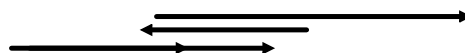
diff



Modelling Integer Addition using Number Lines

We have modelled integer addition using algebra tiles, now we will add using number lines. Remember with number lines positive is to the right and negative is to the left.

Always start at zero



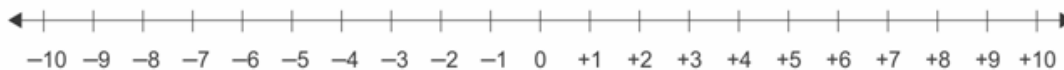
(a) $(+3) + (+5)$



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



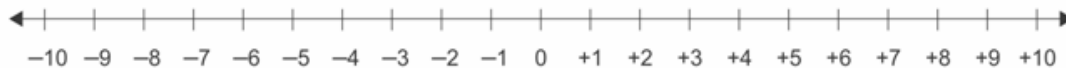
(c) $(+6) + (-3)$



(d) $(-4) + (+8)$



(e) $(-7) + (+5)$



Adding with Rules

-When we add two integers with the same signs:

Ex) 1

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

both signs (-)

Thinking
3+7 = 10
both signs (-)
so answer is -10

Ex) 2

$$(+4) + (+8) = +12$$

both signs (+)

Thinking
4+8 = 12
So answer is +12

Both signs the same then just add both numbers together, ignoring the sign, and the answer has to have the same sign as the original integers

-When we add two integers with the different signs:

Step 1) Cover up the signs and ask yourself which number is larger.
The answer will have the sign of the bigger number

Step 2) Since they are different, ignore the sign and find the difference between the two numbers (Big minus small). That is your number for the answer

$$(-12) + (+3) = -9$$

Different signs

step 1) When you cover up the signs, we have 12 & 3.
12 is Larger so our answer will have the sign on 12 which is (-)

step 2) 12 - 3 = 9

$$\text{Ex) } (+2) + (-7) = -5$$

Different signs

Step 1) between 2 & 7, 7 is bigger so the sign on 7 goes with the answer (-)

Step 2) 7-2 = 5

Add the following using the rules.

$$(a) (+12) + (-9) = \boxed{+3}$$

$$(c) (-15) + (-6) = \boxed{-21}$$

$$(e) (+6) + (-12) = \boxed{-6}$$

$$(g) (-17) + (-7) = \boxed{-24}$$

$$(i) (-8) + (+12) = \boxed{+4}$$

$$(k) (-16) + (+14) = \boxed{-2}$$

$$(b) (-8) + (-3) = \boxed{-11}$$

$$(d) (+14) + (-4) = \boxed{+10}$$

$$(f) (-25) + (+16) = \boxed{-9}$$

$$(h) (+30) + (-21) = \boxed{+9}$$

$$(j) (+6) + (+8) = \boxed{+14}$$

$$(l) (+20) + (-7) = \boxed{+13}$$

Rules for Adding Integers

**When you add two positive integers,
add the numbers and your answer will be positive.**

$$\text{Ex. } (+6) + (+8) = +14 \qquad (+11) + (+9) = +20$$

**When you add two negative integers,
add the numbers and your answer will always be negative.**

$$\text{Ex. } (-5) + (-7) = -12 \qquad (-8) + (-10) = -18$$

**When you add a positive integer and a negative integer,
subtract the numbers, and keep the sign of the larger number.**

$$\begin{array}{ll} \text{Ex. } (-6) + (+8) = +2 & (+4) + (-9) = -5 \\ (+9) + (-12) = -3 & (-15) + (+20) = +5 \end{array}$$



$$\begin{aligned} 6a) \quad & (+7) + (-5) + (+6) \\ & \underbrace{\hspace{1.5cm}}_{(+2)} \quad + \quad (+6) \\ & \underbrace{\hspace{2.5cm}}_{(+8)} \end{aligned}$$

Worksheet 235

Adding Integer Review

Attachments

Grade 8 Math SHEET 235.docx