

Warm Up:

1. Translate the following:

Twice the sum of a number and six is at most ten. $2(x+6) \leq 10$

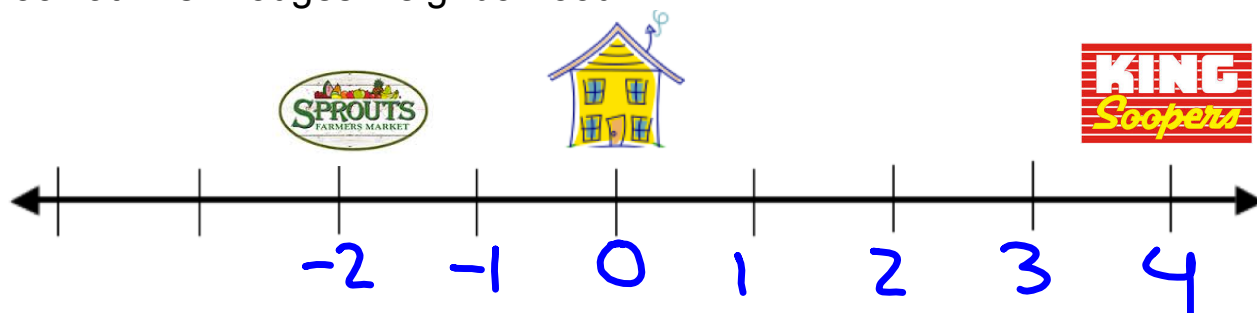
2. Write the following algebraic expression using words:

$3(x-6)$

$3x - 6$

Check homework answers with partner

In order to understand the meaning behind absolute value, let's take a look at Mrs. Hodges' neighborhood.



How far away is Mrs. Hodges' house from King Soopers?

4

How far away is Mrs. Hodges house from Sprouts?

2

Now put a 0 below my house and make the street a number line.

How far away is my house from King Soopers? Sprouts?

4

2

Absolute Value - the distance from zero

$$|-3|$$

Distance is
always
positive!

How far away from 0 is -3? 3 So $|-3| =$ 3

Let's try a few:

1. $|5| = 5$

2. $|-6| = 6$

3. $|0| = 0$

4. $|\underline{15-17}|$

$|-2|$
 2

5. $-2|\underline{23-16}|$

$-2|7|$
 $-2 \cdot 7$
 -14

6. $|\underline{14-20}|+4$

$|-6|+4$
 $6+4$
 10

Practice

1. $|-7|$

7

2. $-|-3|$

-3

3. $-3|-11|-8$

-41

4. $|-2|-2$

0

5. $6+|5^2-11|$

20

6. $|-5|-|3-12|$

5 ↓ 9

-4

What is a square root?

$\sqrt{81}$ is asking $x \cdot x = 81$ or $x^2 = 81$ $\sqrt{81} = 9$

so, $\sqrt{16} = 4$

$\sqrt{25} = 5$

$\sqrt{-100} = \text{can't do}$

What if it isn't a perfect square?

$$\sqrt{50}$$

What is a cube root?

$\sqrt[3]{8}$ is asking $x \cdot x \cdot x = 8$ or $x^3 = 8$

2

so, $\sqrt[3]{64} = 4$

$$\sqrt[3]{27} = 3$$

$$\sqrt[3]{-1} = -1$$

$$-1 \cdot -1 \cdot -1 = -1$$

Practice