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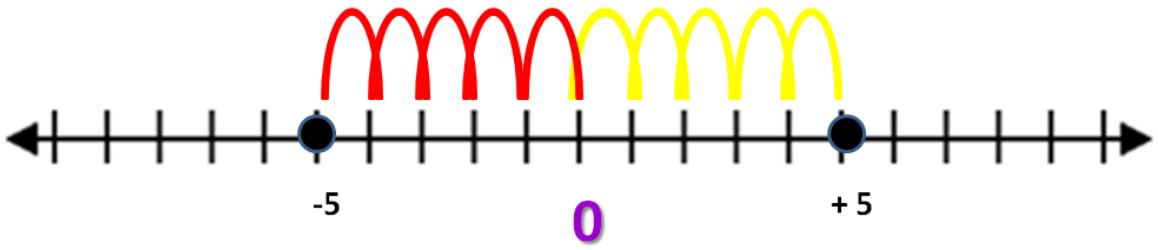
Understand absolute value as distance from zero by comparing it to opposite value

Practice Set C

Name:

Date:

1. Look at the picture below.



a. Explain OPPOSITE VALUES and ABSOLUTE VALUE using the number line diagram shown above.

2. Find numbers for x that will make each statement true. Show or explain your solution.

a. $|x| = x$

The absolute value of this number has the same value as the number itself.

b. $|x| = -(x)$

The absolute value of this number has the same value as its opposite.

3. Place the numbers in order from least to greatest.

Then find their absolute values and place these in order from least to greatest.

a. 4.25, 19, 4, 6

order from least to greatest:

order of the absolute values from least to greatest:

b. -3, -18, -3.6, -4

order from least to greatest:

order of the absolute values from least to greatest:

c. When is the ordering of numbers the same as the order of their absolute values? When is it different? Explain why.

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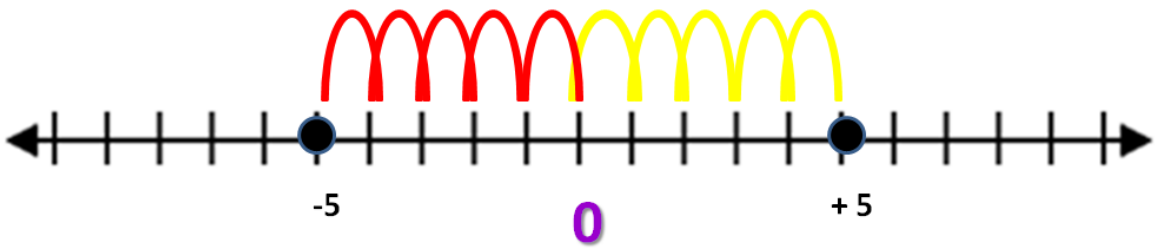
Understand absolute value as distance from zero by comparing it to opposite value, Practice Set C Answer Key

1. Look at the picture below.



a. Explain OPPOSITE VALUES and ABSOLUTE VALUE using the number line diagram shown above.

5 and -5 are opposite values because they are the same distance away from 0 on opposite sides. Their absolute value is the same: 5.

2. Find numbers for x that will make each statement true. Show or explain your solution.

a. $|x| = x$

The absolute value of this number has the same value as the number itself.

Answers may vary but x should be positive.

Example: 3; the absolute value of 3 is 3 because it is 3 units from 0.

b. $|x| = -(x)$

The absolute value of this number has the same value as its opposite.

Answers may vary but x should be negative.

Example: -3; the absolute value of -3 is 3 because it is 3 units from 0. The opposite of -3 is also 3 because they are the same distance from 0 on opposite sides.

3. Place the numbers in order from least to greatest.

Then find their absolute values and place these in order from least to greatest.

a. 4.25, 19, 4, 6

order from least to greatest:

4, 4.25, 6, 19

order of the absolute values from least to greatest:

4, 4.25, 6, 19

b. -3, -18, -3.6, -4

order from least to greatest:

-18, -4, -3.6, -3

order of the absolute values from least to greatest:

3, 3.6, 4, 18

c. When is the ordering of numbers the same as the order of their absolute values? When is it different? Explain why.

The numbers and their absolute values are ordered the same for positive numbers. For negative numbers, the numbers and their absolute values are in reverse or opposite order because the negative number with the least value is the farthest from 0, giving it the greatest absolute value.