Grade 6  
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Unit 7, Lesson 2

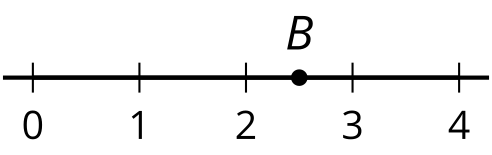
# Points on the Number Line

Let’s plot positive and negative numbers on the number line.

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## 2.1A Point on the Number Line

Which of the following numbers could be represented by point ?



2.45

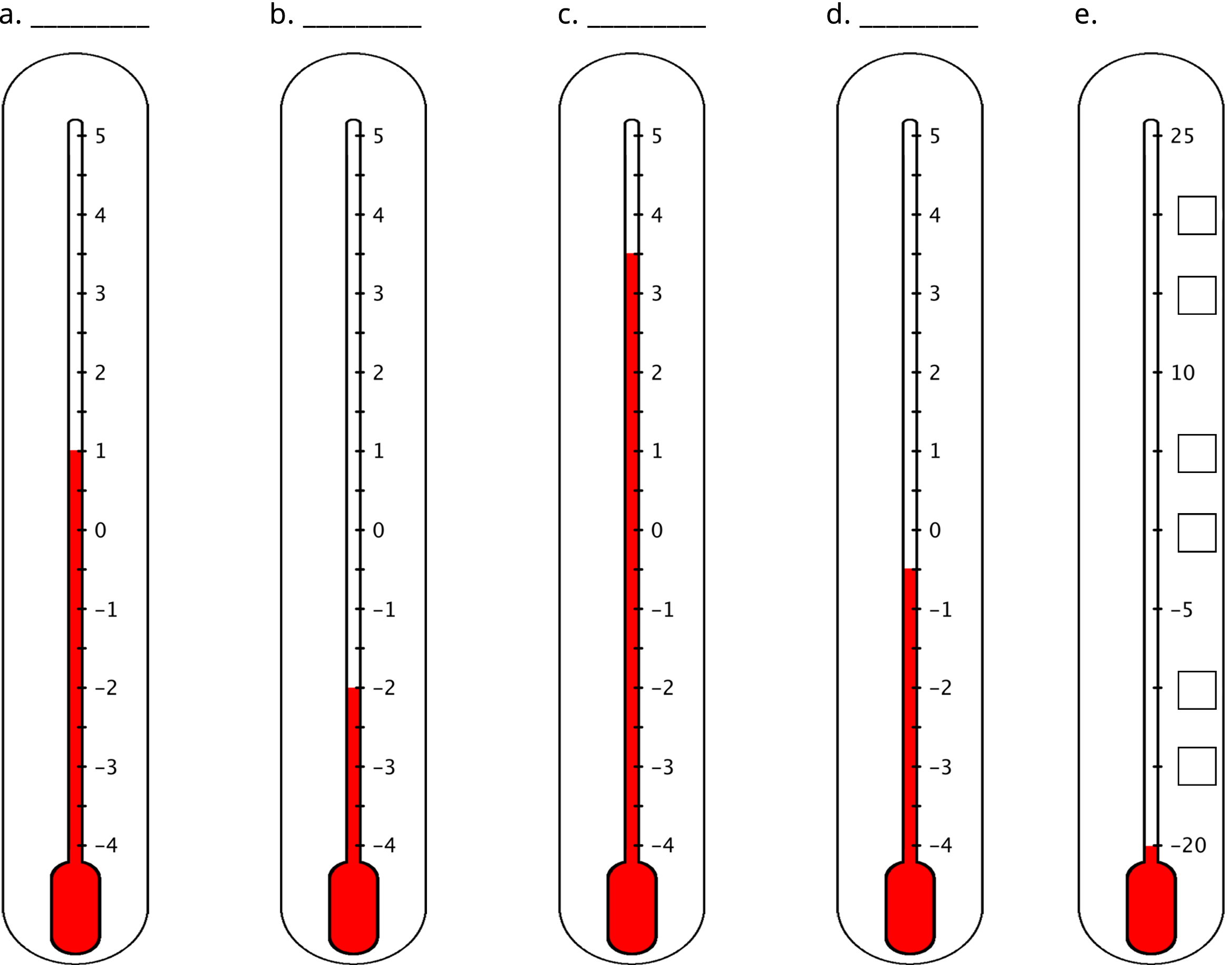
2.11

-2.5

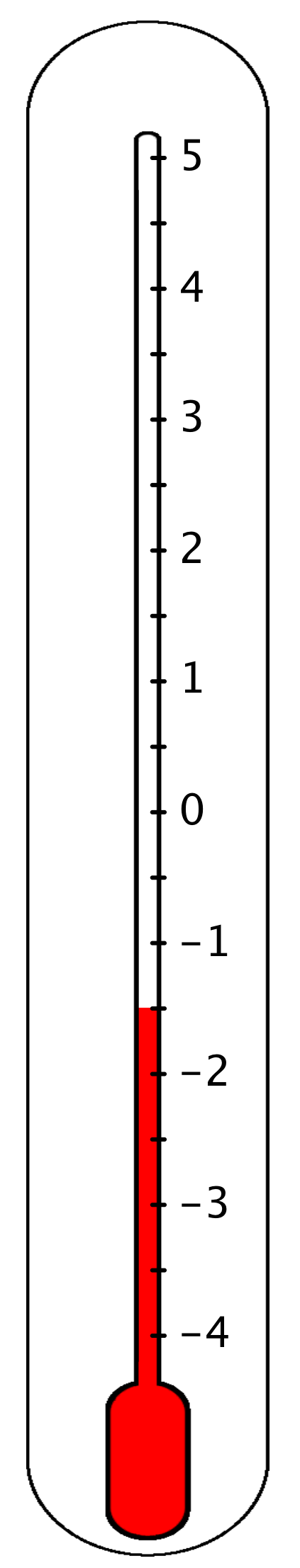
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## 2.2What’s the Temperature?

1. Here are five thermometers. The first four thermometers show temperatures in degrees Celsius . Write the temperatures in the blanks.

* 

1. The last thermometer is missing some numbers. Write them in the boxes.
2. Elena says that the thermometer shown here reads because the line is above . Jada says that it is . Do you agree with either of them? Explain your reasoning.

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## 2.3Folded Number Lines

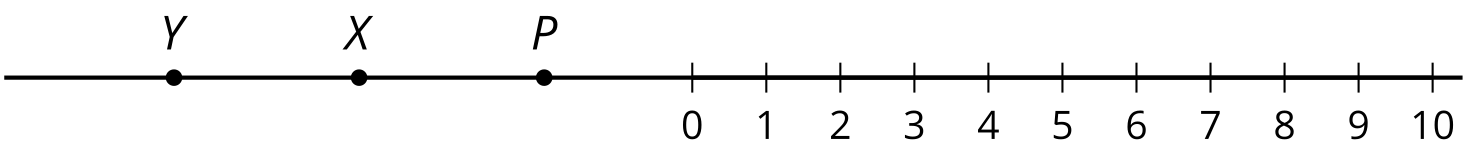
Your teacher will give you a sheet of tracing paper. Follow the steps to make your own number line.

* Use a straightedge or a ruler to draw a horizontal line. Mark the middle point of the line, and label it 0.
* To the right of 0, draw tick marks that are 1 centimeter apart. Label the tick marks 1, 2, 3, . . . , 10. This represents the positive side of your number line.
* Fold your paper so that a vertical crease goes through 0 and the two sides of the number line match up perfectly.
* Use the fold to help you trace the tick marks that you already drew onto the opposite side of the number line. Unfold and label the tick marks -1, -2, -3. . . -10. This represents the negative side of your number line.

1. Use your number line to answer these questions:
   1. Which number is the same distance away from 0 as is the number 4?
   2. Which number is the same distance away from 0 as is the number -7?
   3. Two numbers that are the same distance from 0 on the number line are called **opposites**. Find another pair of opposites on the number line.
   4. Choose a positive number and a negative number that is each farther away from 0 than is the number 5.
   5. Choose a positive number and a negative number that is each farther away from 0 than is the number -2.

* Pause here so your teacher can review your work.

1. Here is a number line with some points labeled with letters. What are the locations of points , , and ? Be prepared to explain or show your reasoning.

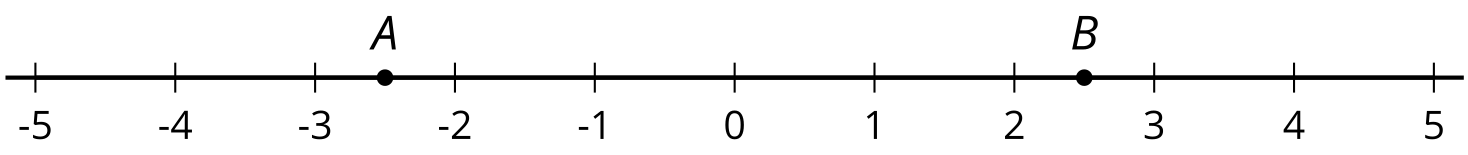
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### Are you ready for more?

​At noon, the temperatures in Portland, Maine, and Phoenix, Arizona, had opposite values. The temperature in Portland was lower than in Phoenix. What was the temperature in each city? Explain your reasoning.

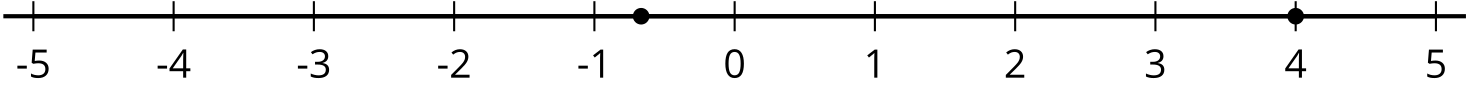
## Lesson 2 Summary

Two numbers that are the same distance from 0 and on different sides of the number line are **opposites**. For example, points A and B are opposites because they are both 2.5 units away from 0 and on opposite sides of 0.



We can also say that the opposite of 8.3 is -8.3, and the opposite of is . The opposite of 0 is itself.

Here is another labeled number line with some **rational numbers**. A rational number is a number that can be written as a positive or negative fraction.



The number 4 is positive, and its location is 4 units to the right of 0 on the number line. The number 4 can be written as or or any other equivalent fraction.

The number is negative, and its location is units to the left of 0 on the number line. To locate on the number line, we can divide the distance between 0 and -1 into thirds and then count 2 thirds to the left of 0.

All fractions and their opposites are rational numbers.