Understanding Fractions
Use What You've Learned
Answers and Explanations

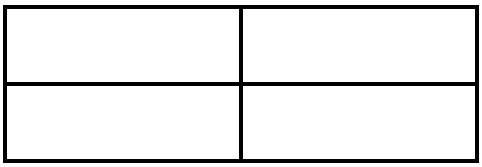
1. One rainy Saturday afternoon, Dion read one half of a book. His brother Jared also read one half of a book. Jared said that he read more than Dion, but Dion said they read the same amount.

   Explain how Jared could be right.
   If the books are different and Jared's book is longer than Dion's book, Jared is right.

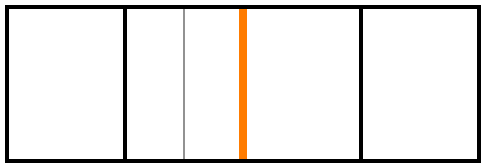
   Explain how Dion could be right.
   If they are reading the same book or two different books that are exactly the same size, Dion is right.

2. Haley said there are many of ways to split a rectangular region into fourths and showed the following ways:

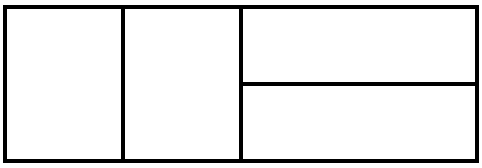
A



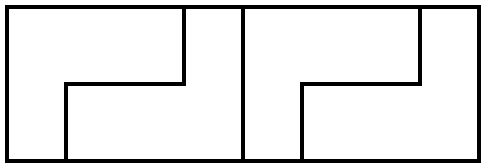
B



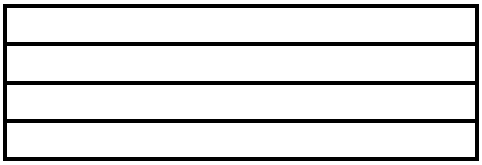
C



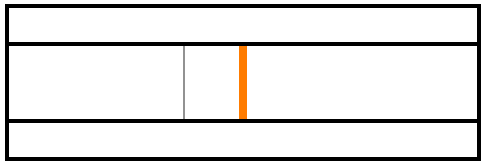
D



E



F



   Which of the rectangular regions do **not** show fourths?
   Diagrams A, C, D and E show fourths. In order to show fourths, you must have four equal-sized parts. The parts do not need to be the same shape, but they must be the same size.
   Show how you could move exactly one line segment to fix the incorrect diagrams.
   The bold line segments show where you could move one line segment in diagrams B and F to show fourths.

3. A teacher showed his class two black marbles and five white marbles. He then asked the class, "What fraction of the marbles are black?"

Ten students answered, "Two fifths."

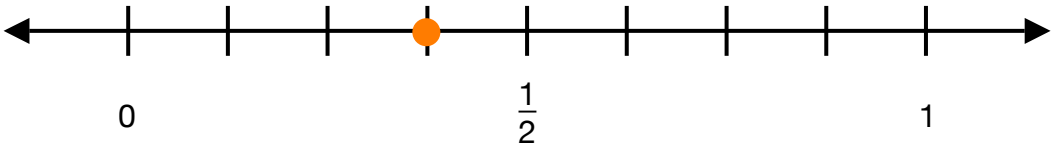
Six students answered, "Two sevenths."

One student answered, "Five sevenths."

What is the correct answer? There are seven total marbles and two black marbles, so two sevenths of the marbles are black.

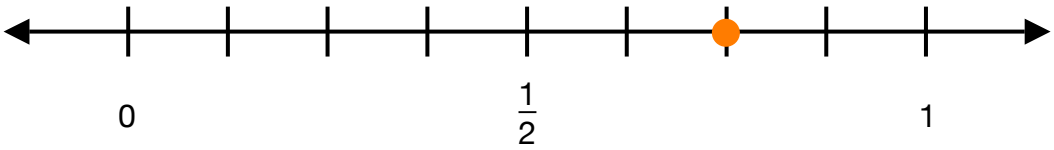
Describe why the other two answers are incorrect. Five sevenths tells the fraction of marbles that are white. Two fifths tells the ratio of black to white marbles, but not the fraction of black marbles.

4. Use a dot to show the location of three eighths on the number line below. Explain how you determined your answer.



There are eight intervals between 0 and 1, so each interval on the number line represents one eighth. The third interval represents three eighths.

5. Use a dot to show the location of three fourths on the number line below. Explain how you determined your answer.



There are eight intervals between 0 and 1, so each interval on the number line represents one eighth. The sixth interval represents six eighths, which is equal to three fourths.