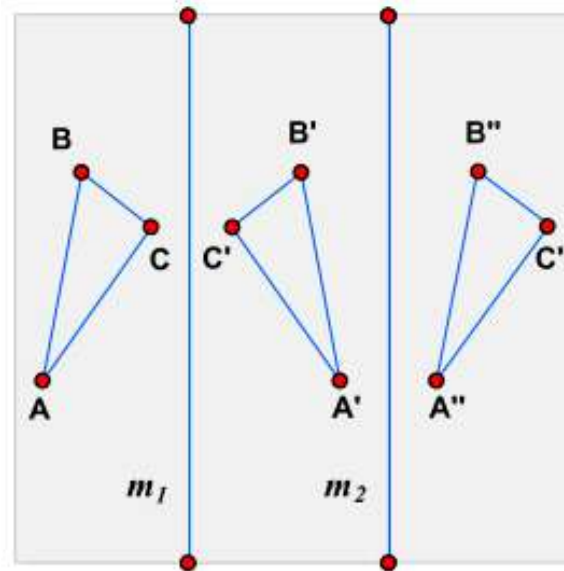


Rigid transformations

Student Activity Sheet 2; use with *Exploring* “Translations and reflections”

Triangle $A''B''C''$ is the composition of two reflections of $\triangle ABC$ across m_1 and m_2 . Using this information and the diagram below, answer questions 10-14.



10. How do the size and shape of $\triangle A''B''C''$ compare with those of $\triangle ABC$? [EX1, page 9]

The triangles have the same size and shape.

11. What do your measurements tell you about the reflected images A'' , B'' , and C'' of the vertices A , B , and C ? [EX1, page 9]

The measurements should show that the images moved the same distance. In other words, $\triangle ABC$ moved a fixed distance with no change in orientation.

12. How does the fixed distance between pre-images A , B , and C and images A'' , B'' and C'' compare with the distance between the parallel lines? [EX1, page 9]

The translation distance is twice the distance between the parallel lines.

Rigid transformationsStudent Activity Sheet 2; use with *Exploring* “Translations and reflections”

13. Fill in the blanks to complete the following statement. [EX1, page 10]

A translation of a shape is a composition of two reflections across parallel lines.

14. **REINFORCE** In the diagram on the previous page, $AA'' = (3x - 9)$ millimeters and the distance between lines m_1 and m_2 is 6 millimeters. Solve for x .

The distance between A and A'' is twice the distance between the two lines of reflection.

$$3x - 9 = 2(6)$$

$$3x - 9 = 12$$

$$3x = 21$$

$$x = 7$$