

Lesson 9 Practice Problems

1. a. Draw parallel lines AB and CD .

b. Pick any point E . Rotate AB 90 degrees clockwise around E .

c. Rotate line CD 90 degrees clockwise around E .

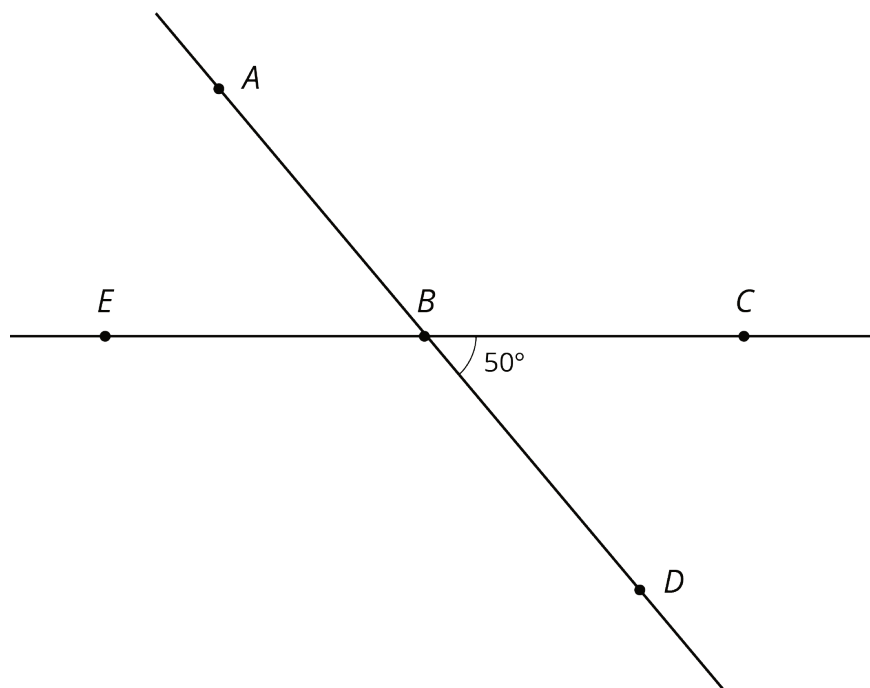
d. What do you notice?

2. Use the diagram to find the measures of each angle. Explain your reasoning.

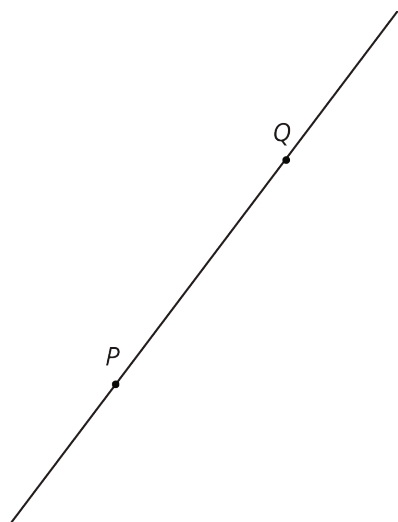
a. $m\angle ABC$

b. $m\angle EBD$

c. $m\angle ABE$

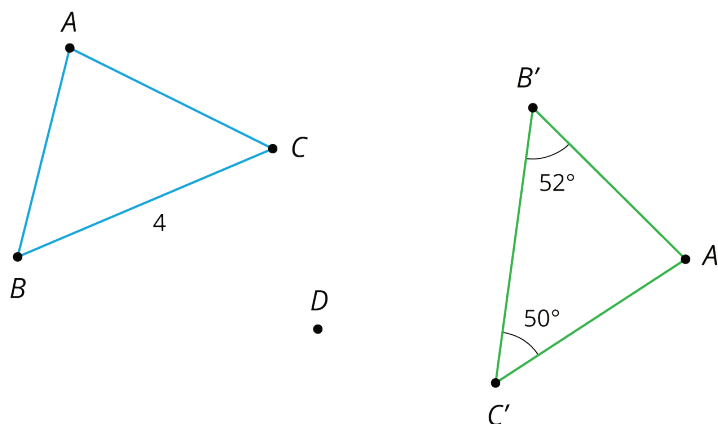


3. Points P and Q are plotted on a line.



- Find a point R so that a 180-degree rotation with center R sends P to Q and Q to P .
- Is there more than one point R that works for part a?

4. In the picture triangle $A'B'C'$ is an image of triangle ABC after a rotation. The center of rotation is D .



- What is the length of side $B'C'$? Explain how you know.
- What is the measure of angle B ? Explain how you know.
- What is the measure of angle C ? Explain how you know.

(From Unit 1, Lesson 7.)

5. The point $(-4, 1)$ is rotated 180 degrees counterclockwise using center $(0, 0)$. What are the coordinates of the image?

A. $(-1, -4)$

B. $(-1, 4)$

C. $(4, 1)$

D. $(4, -1)$

(From Unit 1, Lesson 6.)