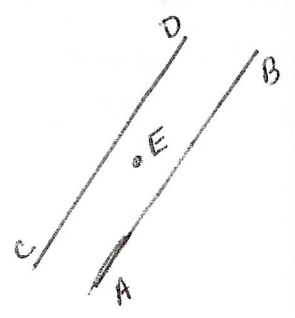


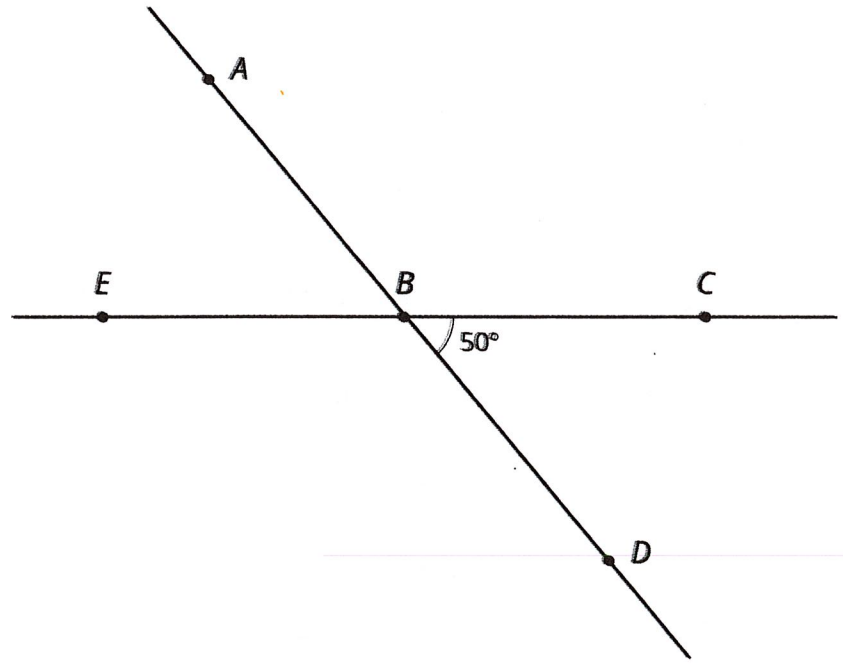
Lesson 9 Practice Problems

1.
 - a. Draw parallel lines AB and CD .
 - b. Pick any point E . Rotate AB 90 degrees clockwise around E .
 - c. Rotate CD 90 degrees clockwise around E .
 - d. What do you notice?

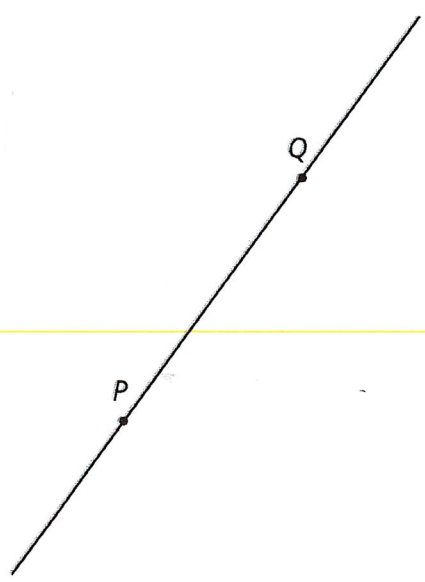


2. Use the diagram to find the measures of each angle. Explain your reasoning.

- a. $m\angle ABC$
- b. $m\angle EBD$
- c. $m\angle ABE$

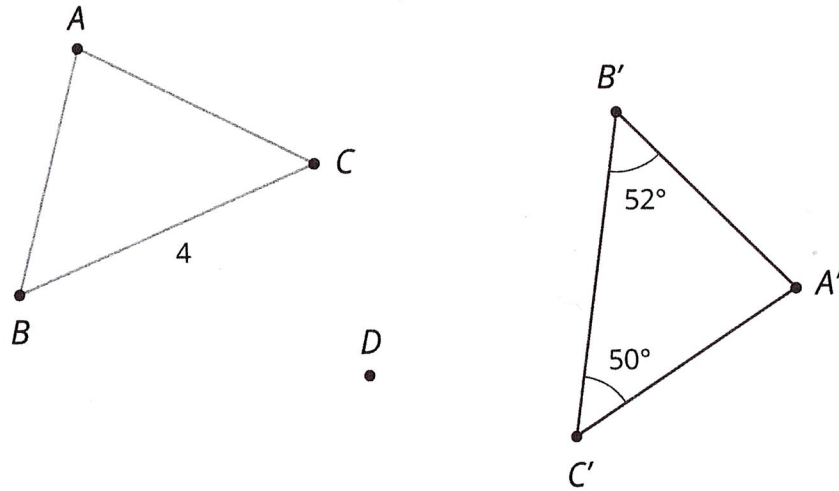


3. Points P and Q are plotted on a line.



- a. Find a point R so that a 180-degree rotation with center R sends P to Q and Q to P .
- b. 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.
5. The point $(-4, 1)$ is rotated 180 degrees counterclockwise using center $(0, 0)$. What are the coordinates of the image?
- $(-1, -4)$
 - $(-1, 4)$
 - $(4, 1)$
 - $(4, -1)$