

Exercises ON YOUR OWN

Draw a diagram similar to the given one. Then do the construction.

1. Construct \overline{XY} congruent to \overline{AB} . Check your work with a ruler.

2. Construct the perpendicular bisector of \overline{AB} . Check your work with a ruler and a protractor.

3. Construct the angle bisector of $\angle C$. Check your work with a protractor.

4. Construct \overline{DE} so that $DE = TR + PB$.

5. Construct \overline{QS} so that $QS = TR - PB$.

6. Construct \overline{XY} so that $XY = 2TR$.

7. Construct $\angle B$ so that $m\angle B = m\angle 1 + m\angle 2$.

8. Construct $\angle C$ so that $m\angle C = m\angle 1 - m\angle 2$.

9. Construct $\angle D$ so that $m\angle D = 2m\angle 2$.

10. Draw an angle that is about 120° . Then construct a congruent angle.

11. Use a ruler to draw two segments that are 4 cm and 5 cm long. Then construct a triangle with sides 4 cm, 4 cm, and 5 cm long.

12. a. Construct a 45° angle.
b. Construct a 135° angle.

13. **Writing** Describe how to construct the midpoint of a segment.

14. **Open-ended** Which method do you prefer for bisecting an angle— paper folding or construction with compass and straight edge? Why?

15. **Patterns** Draw a large triangle with three acute angles. Construct the angle bisectors of all three angles of the triangle. What is true about the intersection of the three angle bisectors? Repeat for another triangle that has an obtuse angle. Make a **conjecture** about the three angle bisectors of any triangle.

