

Name \_\_\_\_\_ Date \_\_\_\_\_

## Building a Roof Truss Angle and Line Segment Bisectors

### Vocabulary

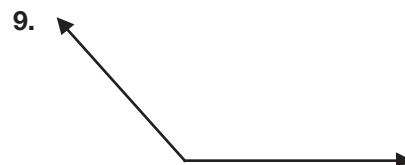
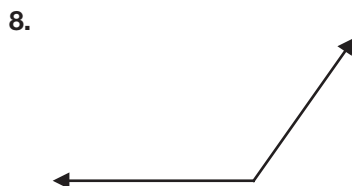
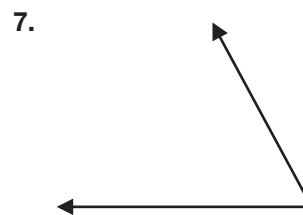
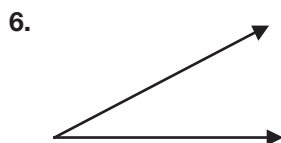
Define each term in your own words.

1. angle bisector
2. perpendicular bisector
3. bisect a line segment
4. bisect an angle
5. line segment bisector

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### Problem Set

Use a compass and a straightedge to bisect each angle.



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## 5.6

# Building a Roof Truss

## Angle and Line Segment Bisectors

*Students should be able to answer these questions after Lesson 5.6:*

- What are the properties of an angle bisector?
- What are the properties of a line segment bisector?

### Directions

**Read Question 1 and its solution. Then complete Questions 2 and 3.**

1. If  $m\angle A = 35^\circ$ , what is the measure of each angle formed when  $\angle A$  is bisected?

**Step 1** The measure of each angle is half of  $m\angle A$ . So, each angle is  $17.5^\circ$ .

2. If  $m\angle A = 130^\circ$ , what is the measure of each angle formed when  $\angle A$  is bisected?

3. What is the measure of  $\angle A$  if its bisected angles measure  $30^\circ$ ?

**Read Question 4 and its solution. Then complete Questions 5 and 6.**

4. A line segment that is 30 inches long is bisected. What is the measure of the line segments that are formed by the segment bisector?

**Step 1** The length of each line segment is half of the length of the original segment. So, each segment is 15 inches.

5. A line segment that is 22 inches long is bisected. What is the measure of the line segments that are formed by the segment bisector?

6. If the segments formed by a segment bisector are 13 cm long, what is the original length of the segment that was bisected?