Name _____ Date _____ Class _____

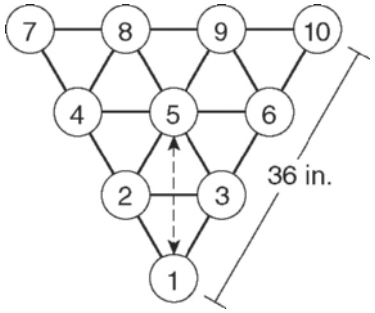
LESSON 5-8

Problem Solving

Applying Special Right Triangles

For Exercises 1–6, give your answers in simplest radical form.

1. In bowling, the pins are arranged in a pattern based on equilateral triangles. What is the distance between pins 1 and 5?



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2. To secure an outdoor canopy, a 64-inch cord is extended from the top of a vertical pole to the ground. If the cord makes a 60° angle with the ground, how tall is the pole?

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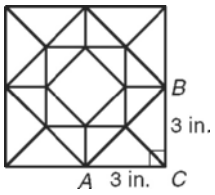
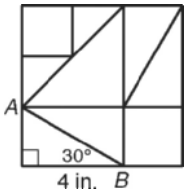
Find the length of $\overline{AB}$ in each quilt pattern.

3. 

4. 

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Choose the best answer.

5. An equilateral triangle has an altitude of 21 inches. What is the side length of the triangle?

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6. A shelf is an isosceles right triangle, and the longest side is 38 centimeters. What is the length of each of the other two sides?

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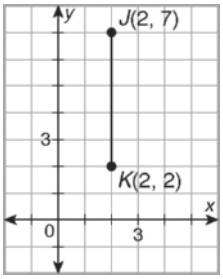
Use the figure for Exercises 7 and 8.

Assume $\triangle JKL$ is in the first quadrant, with $m\angle K = 90°$.



7. Suppose that $\overline{JK}$ is a leg of $\triangle JKL$, a 45°-45°-90° triangle. What are possible coordinates of point *L*?

   A (6, 4.5) C (6, 2)

   B (7, 2) D (8, 7)

8. Suppose $\triangle JKL$ is a 30°-60°-90° triangle and $\overline{JK}$ is the side opposite the 60° angle. What are the approximate coordinates of point *L*?

   F (4.9, 2) H (8.7, 2)

   G (4.5, 2) J (7.1, 2)