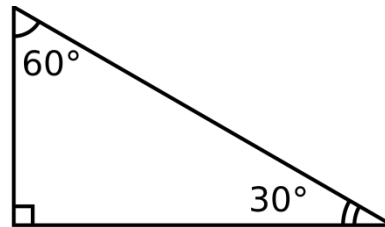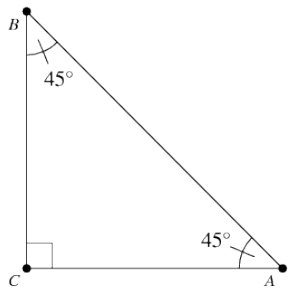Precalculus Trigonometry Pre Assessment {Assignment to complete after CHAPTER 3 test}

1. Convert to radians: 435°

2. Convert to degrees: $\frac{5\pi}{9}$

3. Write the three trigonometric ratios:

$$\sin = \frac{\quad}{\quad} \qquad \cos = \frac{\quad}{\quad} \qquad \tan = \frac{\quad}{\quad}$$

4. What is the Pythagorean Theorem formula and what is it used to find?

5. There are two types of "Special Right Triangles." Identify the ratio of sides for each type of triangle:

6. A ladder leans against a wall at a 45° angle. If the ladder is 12 feet long, how far up the wall does the ladder reach?

7. **GEOGRAPHY** Christian found two trees directly across from each other in a canyon. When he moved 100 feet from the tree on his side (parallel to the edge of the canyon), the angle formed by the tree on his side, Christian, and the tree on the other side was 70°. Find the distance across the canyon.

8. **LADDERS** The recommended angle of elevation for a ladder used in fire fighting is 75°. At what height on a building does a 21-foot ladder reach if the recommended angle of elevation is used? Round to the nearest tenth.

9. . **RAMPS** Two bicycle ramps each cover a horizontal distance of 8 feet. One ramp has a 20° angle of elevation, and the other ramp has a 35° angle of elevation, as shown at the right.

   a. How much taller is the second ramp than the first? Round to the nearest tenth.

   b. How much longer is the second ramp than the first? Round to the nearest tenth.