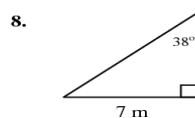
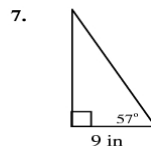
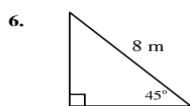
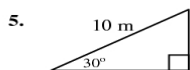
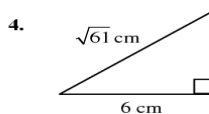
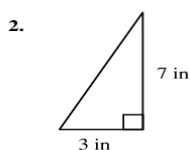
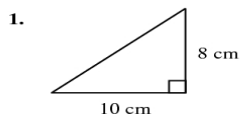


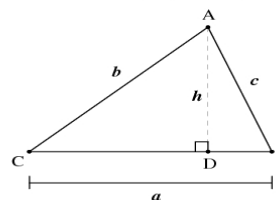
Exercise Set 7.2: Area of a Triangle

Use the formula $A = \frac{1}{2}bh$ to find the area of each of the following triangles. (You may need to find the base and/or the height first, using trigonometric ratios or the Pythagorean Theorem.) Give exact values whenever possible. Otherwise, round answers to the nearest hundredth.

Note: Figures may not be drawn to scale.



In $\triangle ABC$ below, $\overline{AD} \perp \overline{BC}$. Use the diagram below to answer the following questions.



9. (a) Use $\triangle ACD$ to write a trigonometric ratio that involves $\angle C$, b , and h .
 (b) Using the equation from part (a), solve for h .
 (c) If a represents the base of $\triangle ABC$, and h represents the height, then the area K of $\triangle ABC$ is $K = \frac{1}{2}ah$. Substitute the equation from part (b) into this equation to obtain a formula for the area of $\triangle ABC$ that no longer contains h .
10. (a) Use $\triangle ABD$ to write a trigonometric ratio that involves $\angle B$, c , and h .
 (b) Using the equation from part (a), solve for h .
 (c) If a represents the base of $\triangle ABC$, and h represents the height, then the area K of $\triangle ABC$ is $K = \frac{1}{2}ah$. Substitute the equation from part (b) into this equation to obtain a formula for the area of $\triangle ABC$ that no longer contains h .