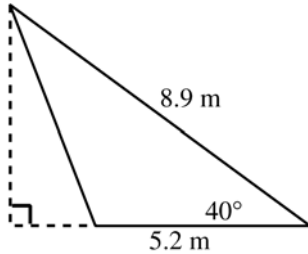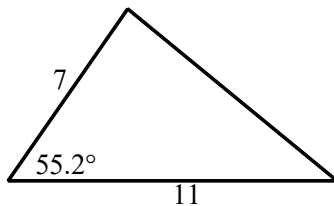NAME:_____

1. Find the area of this triangle.   [A] 46.28 m²   [B] 14.87 m²   [C] 29.75 m²   [D] 23.14 m²

2. When constructing a sail, a team put fabric in this triangular shape and measured two adjacent sides in feet and the included angle. What is the area of the sail?

3. A gardener needs to cultivate a triangular plot of land. One angle of the garden is 26°, and the sides that surround it are 72 ft and 56 ft. What is the area of the plot of land?

[A] 1812.0 ft²   [B] 907.4 ft²   [C] 1767.5 ft²   [D] 883.8 ft²

4. Two sides of a triangular plot of land are 100 ft and 80 ft, and the angles between those two sides is 88°. Find the area of the plot of land.

5. Use the theorem that the area of a triangle is half the product of two side lengths and the sine of the included angle to show the area of a right triangle is half the product of the legs.

[1] B

[2] 31.6 ft^2

[3] D

[4] 3997.6 ft^2

The sine of 90° is 1, so $\frac{1}{2}$ × side length × side length × sine of the included angle becomes

[5] $\frac{1}{2}$ × side length × side length or $\frac{1}{2}$ the product of the two legs.