2. (8 pts.) The triangle shown at right has sides of length 6 inches and 9 inches with an included angle of 40°. Find the area of the triangle.

\[ A = \frac{1}{2}bh = \frac{1}{2} \cdot 9\cdot 6 \cdot \sin 40° \]

\[ = 27 \sin 40° \text{ in}^2 \]

\[ \approx 17.36 \text{ in}^2 \]

3. (10 pts.) A surveyor wishes to determine the distance across a lake as shown. Use the distances and angle given in the figure to find the distance across the lake.

\[ x = \sqrt{90^2 + 150^2 - 2(90)(150) \cos 50°} \text{ ft} \]

\[ \approx 115 \text{ ft} \]