Each problem is worth 5 points. For full credit indicate clearly how you reached your answer.

1. a) Convert $120^\circ$ to radians.

b) Convert $\pi/12$ radians to degrees.

\[ 120^\circ = \frac{\pi \text{ radians}}{180} \]

\[ 120^\circ \times \frac{\pi \text{ radians}}{180} = \frac{2\pi}{3} \]

\[ \frac{110}{12} = \frac{180}{\pi} \]

\[ \frac{110 \times 12}{12} = 21.98 \]

\[ \frac{23.39}{8} \]

2. If a right triangle has an angle of measure $20^\circ$ and the length of the side opposite it is 8 inches, find the lengths of the other sides (accurate to 2 decimal places).

\[ \tan 20^\circ = \frac{8}{x} \]

\[ \sin(20) = \frac{8}{y} \]

\[ y = \sin(20) = 23.39 \]

\[ x = 21.98 \]

\[ y = 23.39 \]

\[ \text{Excellent!} \]