

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.

$$\frac{\text{Radians to Degrees}}{\hookrightarrow} \frac{180}{\pi \text{ radians}}$$

$$\frac{\text{Degrees to Radians}}{\hookrightarrow} \frac{\pi \text{ radians}}{\text{degrees}}$$

$$120^\circ = \frac{\pi \text{ radians}}{180} \quad \text{a.)}$$

$$\frac{120\pi}{180} \quad \text{or} \quad 120^\circ = \frac{2\pi}{3}$$

Great Job!

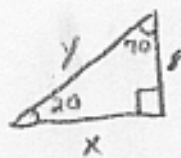
$$\frac{\pi}{12} = \frac{180}{\pi}$$

$$\frac{180\pi}{12} = \pi$$

$$\text{b.) } \frac{\pi}{12} = 15^\circ$$

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).

SOH CAH TOA



$$\tan 70 = \frac{x}{8}$$

$$8 \tan 70 = x$$

$$\sin(20) = \frac{8}{y}$$

$$y \sin(20) = 8$$

$$y = \frac{8}{\sin(20)} = 23.39$$

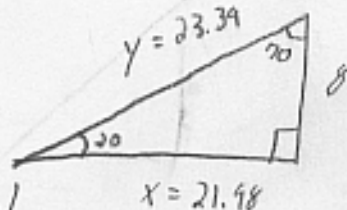
or could find it

this way

Just checking my answer

$$x = 21.98$$

$$y = 23.39$$



Excellent!

$$483 + 64 = y^2$$

$$\sqrt{547.11} = \sqrt{y^2}$$

$$y = 23.39$$