

**Part II) Practice Problems**

1. Calculate the value of x to the nearest degree:  $\sin x^\circ = 0.78801$

$$\sin^{-1}(0.78801) = x^\circ$$

$$\boxed{52^\circ = x}$$

2. Calculate the value of y to the nearest tenth:  $\cos y^\circ = \frac{24}{25}$

$$\cos^{-1}\left(\frac{24}{25}\right) = y^\circ$$

$$\boxed{16.3^\circ = y}$$

3. Calculate the value of z to the nearest hundredth:  $\tan z^\circ = \frac{84.93}{34.627}$

$$\tan^{-1}\left(\frac{84.93}{34.627}\right) = z^\circ$$

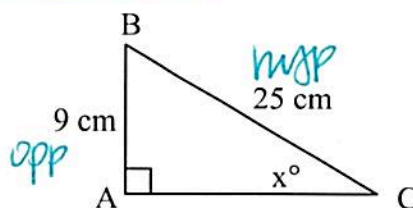
$$\boxed{67.82^\circ = z}$$

4. Determine the measure of angle x to the nearest tenth.

$$\sin x = \frac{9}{25}$$

$$\sin^{-1}\left(\frac{9}{25}\right) = x$$

$$\boxed{21.1^\circ = x}$$

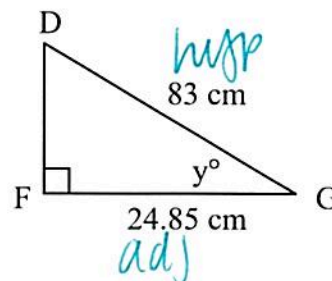


5. Determine the measure of angle y to the nearest hundredth.

$$\cos y = \frac{24.85}{83}$$

$$\cos^{-1}\left(\frac{24.85}{83}\right) = y$$

$$\boxed{72.58^\circ = y}$$

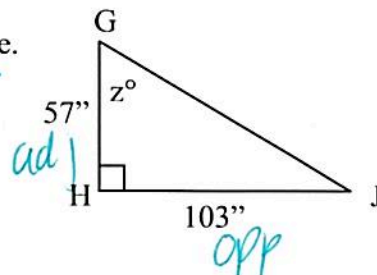


6. Determine the measure of angle z to the nearest degree.

$$\tan z^\circ = \frac{103}{57}$$

$$\tan^{-1}\left(\frac{103}{57}\right) = z$$

$$\boxed{61^\circ = z}$$

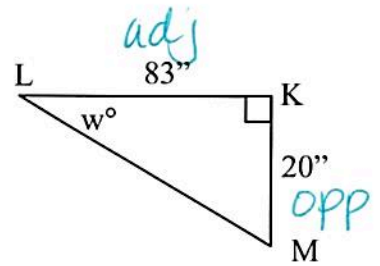


7. Determine the measure of angle  $w$  to the nearest degree.

$$\tan w = \frac{20}{83}$$

$$\tan^{-1}\left(\frac{20}{83}\right) = w$$

$$\boxed{14^\circ = w}$$



SKIP

8. Error Analysis: Josh was asked to determine the measure of angle  $x$  to the nearest hundredth. His teacher marked it incorrect. His work is shown below. Find his error, and then correct it.

$$\sin x = \frac{100}{172} \quad \checkmark$$

rewrite:

$$x = \sin^{-1}\left(\frac{100}{172}\right) \quad \checkmark$$

use a decimal approximation:

$$x = \sin^{-1}(0.58140) \quad \checkmark$$

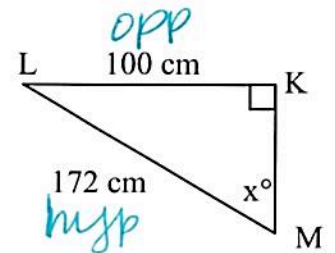
if you raise it to the  $-1$  power, use a reciprocal:

$$x = \frac{1}{\sin(0.58140)}$$

Simplify:

$$x = \frac{1}{0.01015}$$

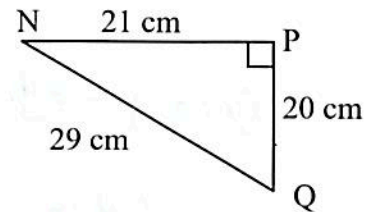
$$x = 98.52^\circ$$



← plug into calculator  
 $x = 35.55^\circ$

9. For the triangle pictured, Marcy placed her finger on the vertex of angle  $N$  and concluded that  $\cos N = \frac{21}{29}$ .

Likewise, Timmy placed his finger on the vertex of angle  $N$  and concluded that  $\sin N = \frac{20}{29}$ .



a) If you solve it beginning with Marcy's equation, what answer will she get?

$$\cos N = \frac{21}{29} = 43.6^\circ$$

b) If you solve it Timmy's way, what answer will he get?

$$\sin N = \frac{20}{29} = 43.6^\circ$$

c) Are these results reasonable? Explain.

Yes, they are using appropriate trig ratios to find the same angle