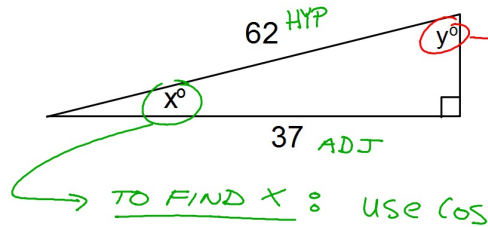


Find the value of x and y to the nearest hundredth.

SOHCAHTOA



$$\cos x^\circ = \frac{37}{62}$$

$$x^\circ = \cos^{-1}\left(\frac{37}{62}\right)$$

$$x^\circ = 53.36^\circ$$

if you've already found angle x you can find angle y this way:

$$y^\circ = 90 - x^\circ$$

$$y^\circ = 90 - 53.36^\circ$$

$$y^\circ = 36.64^\circ$$

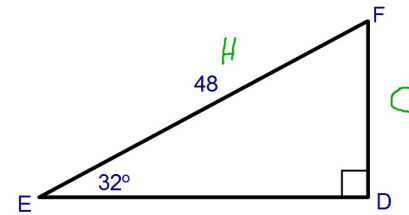
If you wanted to find y first 37 would be the opposite leg and you would have to use inverse Sin: $\sin^{-1}(37/62)$

If you found the missing leg using the Pythagorean Theorem you would get 49.75. Since x is opposite the bigger leg it should be a bigger angle than y. This confirms the answers we got make sense.

Solve this triangle. Round to the nearest hundredth.

SOHCAHTOA

$$\angle F = 90^\circ - 32^\circ = 58^\circ$$



It makes sense that ED is bigger than FD, because ED is opposite Angle F which is a bigger angle than Angle E.

FD:

Using the 32° angle, FD is the Opposite leg and 48 is the Hypotenuse.

Therefore, you must use Sin to find FD.

$$\sin 32^\circ = \frac{FD}{48}$$

multiply both sides by 48 and you get:
FD = 25.44

ED: Using the 32° angle, ED is the Adjacent leg and 48 is the Hypotenuse. Therefore, you must use Cos to find ED.

$$\cos 32^\circ = \frac{ED}{48}$$

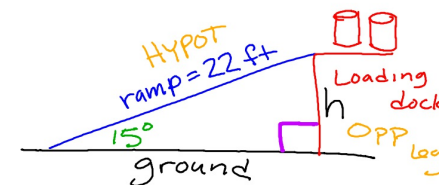
multiply both sides by 48 and you get:
ED = 40.71

Hwk #12 Sec 14-3

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Problems 2(a,f), 3(a,b,e), 5, 6, 36, 37

A 22 foot long ramp runs from the parking lot up to the loading dock of a building. The ramp makes a 15° angle with the ground. How high above the parking lot is the loading dock? Round to the nearest tenth of a foot.



SOHCAHTOA

$$\sin 15^\circ = \frac{h}{22}$$

multiply both sides by 22.

$$h = 5.7 \text{ ft}$$