

## Sore Dancers

1. 0.974

2. 0.611

3. 0.798

4. 0.748

5. 0.218

6. 1.314

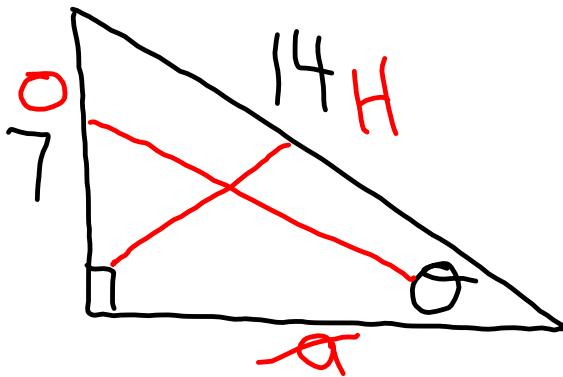
7. 0.391

8. 0.804

# Notes May 15

Using Trig Ratios to find angles.

SOH CAH TOA



We want to find Theta.

What ratio uses O & H?

$$\sin \theta = \frac{O}{H}$$

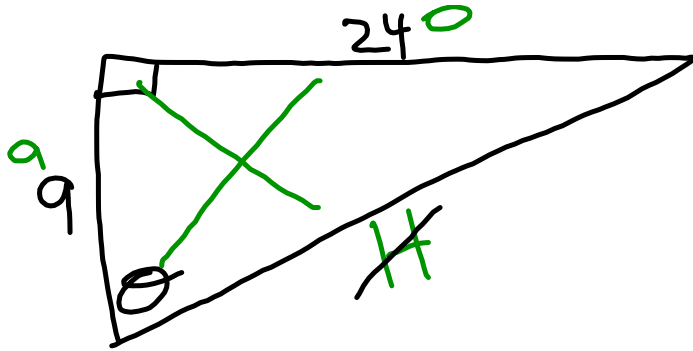
$$\sin \theta = \frac{7}{14} \leftarrow \text{What does that equal?}$$

$$\sin \theta = 0.5 \leftarrow \text{What angle gives that ratio?}$$

$$\theta = \sin^{-1}(0.5)$$

We need to isolate  $\theta$

$$\theta = 30^\circ$$



SOH CAH TOA

Find  $\theta$ 

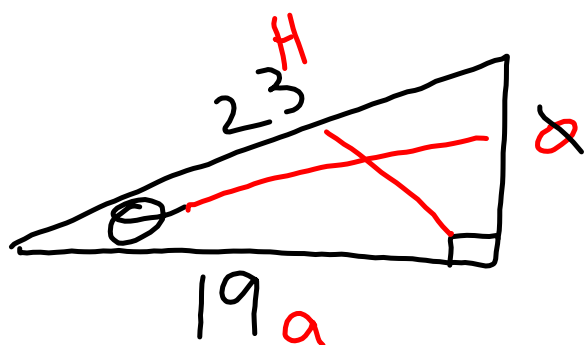
$$\theta \approx 69.45^\circ$$

$$\tan \theta = \frac{24}{9}$$

$$\tan \theta = 2.6$$

$$\theta = \tan^{-1}(2.6)$$

$$\theta = 69.44^\circ$$



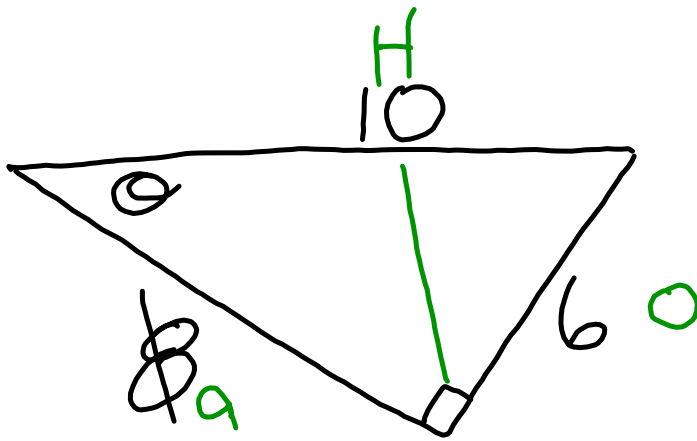
Solve for  $\theta$

$$\cos \theta = \frac{a}{h}$$

$$\cos \theta = \frac{19}{23}$$

$$\theta = \cos^{-1}\left(\frac{19}{23}\right)$$

$$\theta = 34.30115$$



We can use any ratio. Choose to get rid of one side.

Find the angle.

$$\sin \theta = \frac{O}{H}$$

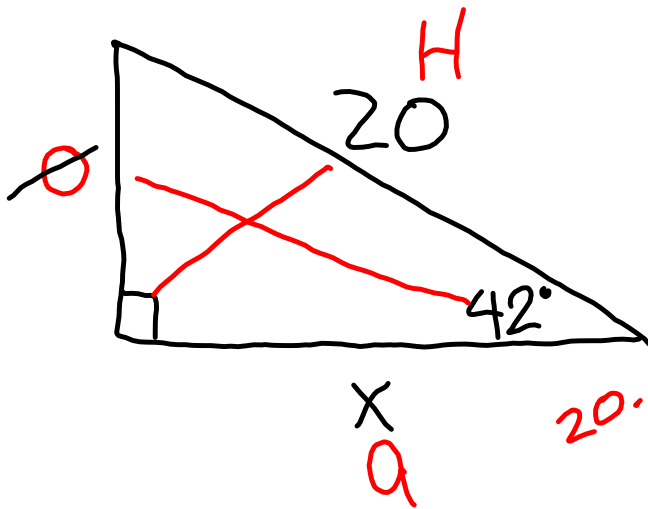
$$\sin \theta = \frac{6}{10}$$

$$\theta = \sin^{-1}\left(\frac{6}{10}\right)$$

$$\theta \approx 36.87$$

# Trig to find unknown side

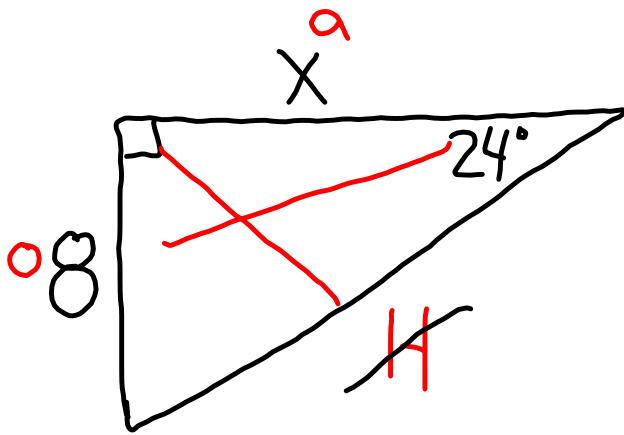
SOH CAH TOA



$$\cos \theta = \frac{a}{h}$$

$$20 \cdot \cos 42 = \frac{x}{20}$$

$$x = 14.9$$



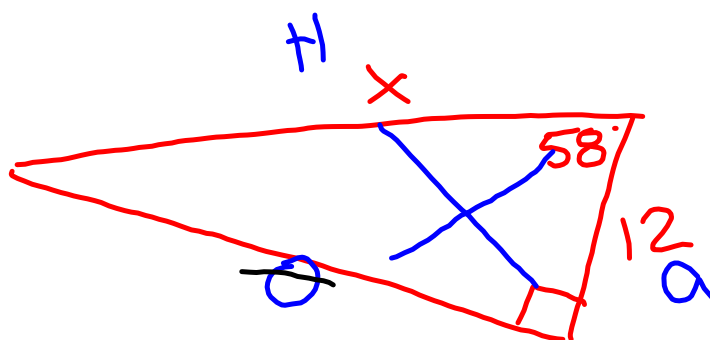
$$\tan \theta = \frac{o}{a}$$

$$\tan 24 = \frac{8}{x}$$

flip them

$$8 \cdot \frac{1}{\tan 24} = \frac{x}{8}$$

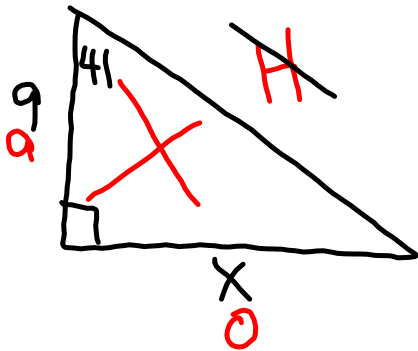
$$x = 18.0$$



$$\cos \theta = \frac{a}{H}$$

$$\cos 58 = \frac{12}{X} \rightarrow \cos 58 = \frac{12}{X}$$

$$X = 22.64$$



$$\tan \theta = \frac{o}{a}$$

$$9. \quad \tan 41 = \frac{x}{9}$$

$$x = 7.82$$