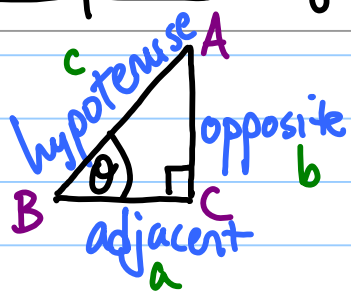


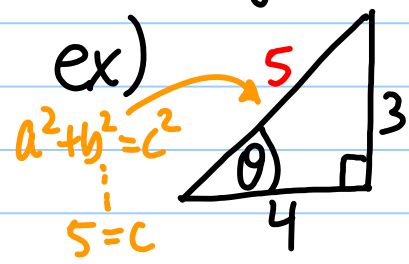
9/11  
TUE

# 4.3 (part I) Right Triangle Trigonometry

SOH CAH TOA



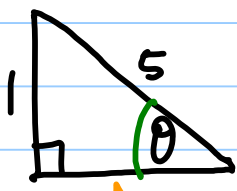
$$a^2 + b^2 = c^2$$



Find all 6 trig ratios

$$\begin{aligned} \sin \theta &= \frac{3}{5} & \csc \theta &= \frac{5}{3} \\ \cos \theta &= \frac{4}{5} & \sec \theta &= \frac{5}{4} \\ \tan \theta &= \frac{3}{4} & \cot \theta &= \frac{4}{3} \end{aligned}$$

ex) Find all 6 trig ratios



$$\begin{aligned} a^2 + b^2 &= c^2 \\ 1^2 + b^2 &= 5^2 \\ b^2 &= 25 - 1 = 24 \\ b &= \sqrt{24} = 2\sqrt{6} \end{aligned}$$

$$\sin \theta = \frac{1}{5}$$

$$\cos \theta = \frac{2\sqrt{6}}{5}$$

$$\tan \theta = \frac{1}{2\sqrt{6}} \cdot \frac{\sqrt{6}}{\sqrt{6}} = \frac{\sqrt{6}}{12}$$

$$\csc \theta = \frac{5}{1}$$

$$\sec \theta = \frac{5}{2\sqrt{6}} \cdot \frac{\sqrt{6}}{\sqrt{6}} = \frac{5\sqrt{6}}{12}$$

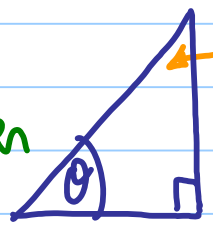
$$\cot \theta = \frac{2\sqrt{6}}{1}$$

## Cofunctions

$$\sin \theta = \cos (90^\circ - \theta)$$

$$\tan \theta = \cot (90^\circ - \theta)$$

$$\sec \theta = \csc (90^\circ - \theta)$$



Complementary angle

HW  
p498  
2-28 even

ex) Find the cofunction:

a)  $\sin 72^\circ \rightarrow \cos (90^\circ - 72^\circ) \rightarrow \cos 18^\circ$

b)  $\sec \frac{\pi}{4} \rightarrow \csc (\frac{\pi}{2} - \frac{\pi}{4}) \rightarrow \csc \frac{\pi}{4}$