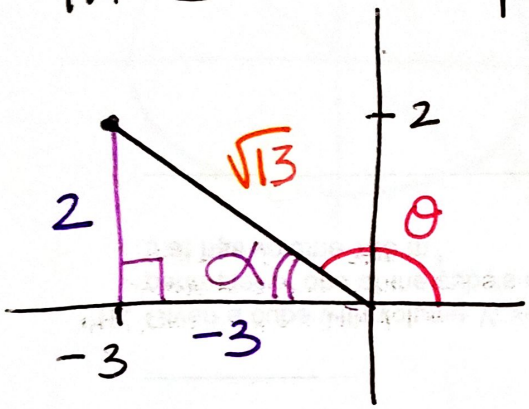
4.4 Evaluating Trig Functions for Any $\angle$

- ex: Determine the exact values of the 6 trig fcns. when the point $(-3,2)$ is on the terminal side of an angle in standard position.



$2^2+3^2=c^2$

$4+9=c^2$

$13=c^2$

$c=\sqrt{13}$

$\sin\alpha = \frac{2}{\sqrt{13}}\left(\frac{\sqrt{13}}{\sqrt{13}}\right) = \boxed{\frac{2\sqrt{13}}{13}}$

$\cos\alpha = \frac{3}{\sqrt{13}}\left(\frac{\sqrt{13}}{\sqrt{13}}\right) = \boxed{\frac{-3\sqrt{13}}{13}}$

$\tan\alpha = \boxed{\frac{-2}{3}}$

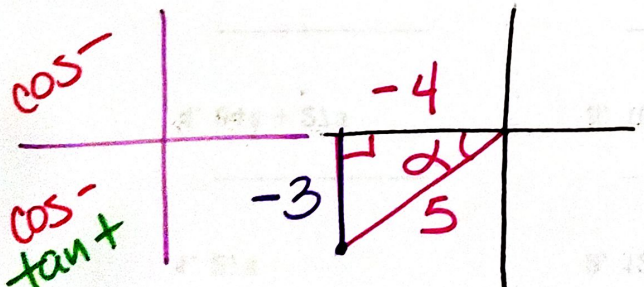
$\csc\alpha = \boxed{\frac{\sqrt{13}}{2}}$

$\sec\alpha = \boxed{\frac{-\sqrt{13}}{3}}$

$\cot\alpha = \boxed{\frac{-3}{2}}$

ex: Find $\csc\theta$ ($\frac{H}{O}$) when $\cos\theta = -\frac{4}{5}$ ($\frac{A}{H}$) and ~~$\tan > 0$~~.

positive



$(-4)^2+y^2=5^2$

$16+y^2=25$

$y^2=9$

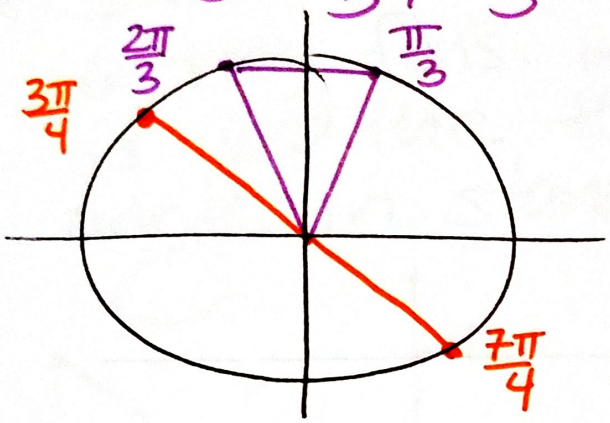
$y=3$

$\boxed{\csc\theta = -\frac{5}{3}}$

ex: Give 2 solutions for each eqn.

A) $\sin\theta = \frac{\sqrt{3}}{2}$

$\theta = \frac{\pi}{3}, \frac{2\pi}{3}$



B) $\cot\theta = -1$

$\theta = \frac{3\pi}{4}, \frac{7\pi}{4}$