

$$6. \sin A = \frac{-\sqrt{22}}{5} \quad \cos A = \frac{-\sqrt{3}}{5}$$

$$\tan A = \frac{y}{x} = \frac{-\frac{\sqrt{22}}{5}}{-\frac{\sqrt{3}}{5}} = \frac{\sqrt{22}}{\sqrt{3}}$$

$$= \frac{\sqrt{22} \cdot \sqrt{3}}{\sqrt{3} \cdot \sqrt{3}}$$

$$\sin A = \frac{-\sqrt{22}}{5} \quad \cos A = \frac{-\sqrt{3}}{5} \quad \tan A = \frac{\sqrt{66}}{3}$$

$$\csc A = \frac{5}{-\sqrt{22}} = \frac{-5\sqrt{22}}{22}$$

$$\sec A = \frac{5}{-\sqrt{3}} = \frac{-5\sqrt{3}}{3}$$

$$\cot A = \frac{3}{\sqrt{66}} = \frac{3\sqrt{66}}{66} = \frac{\sqrt{66}}{22}$$

UNIT CIRCLE

$$\cos \theta = x$$

$$\sin \theta = y$$

$$\tan \theta = \frac{y}{x}$$

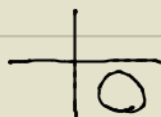
$$\sec \theta = \frac{1}{x}$$

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

$$\cot \theta = \frac{x}{y}$$

$$7. \cos A = \frac{5}{13}, \quad A \text{ in Q IV}$$

① DETERMINE QUADRANT



② FIND x, y, r

$$\cos A = \frac{5}{13}$$

$$\text{AND } \cos A = \frac{x}{r}$$

$$\text{SO } x = 5 \quad r = 13$$

$$x^2 + y^2 = r^2$$

$$5^2 + y^2 = 13^2$$

$$25 + y^2 = 169$$

$$y^2 = 169 - 25$$

$$y^2 = 144$$

$$y = \pm \sqrt{144}$$

$$y = \pm 12$$

SO $y = -12$

③ USE FORMULAS TO FIND TRIG FUNCTIONS

$$\sin A = \frac{y}{r} = \frac{-12}{13}$$

$$\tan A = \frac{y}{x} = \frac{-12}{5}$$

$$\sec A = \frac{13}{5}$$

$$\csc A = \frac{13}{-12}$$

$$\cot A = \frac{5}{-12}$$

POINT NOT ON UNIT CIRCLE

NOTE: $r = \sqrt{x^2 + y^2}$

$$\cos A = \frac{x}{r} \quad \sec A = \frac{r}{x}$$

$$\sin A = \frac{y}{r} \quad \csc A = \frac{r}{y}$$

$$\tan A = \frac{y}{x} \quad \cot A = \frac{x}{y}$$

$$r^2 = x^2 + y^2$$