

$$5 \tan \theta - 1 = 3$$

$$0 \leq \theta \leq 360$$

temp. replacement

$$x := \tan \theta$$

⇓

$$5x - 1 = 3 \quad | \quad (+1)$$

$$5x - 1 + 1 = 3 + 1$$

$$5x = 4 \quad | \quad (\div 5)$$

$$\frac{5x}{5} = \frac{4}{5}$$

$$x = \frac{4}{5}$$

restore x: $\downarrow$
 $x = \tan \theta$

$$\tan \theta = \frac{4}{5} \rightarrow \approx 0.8$$

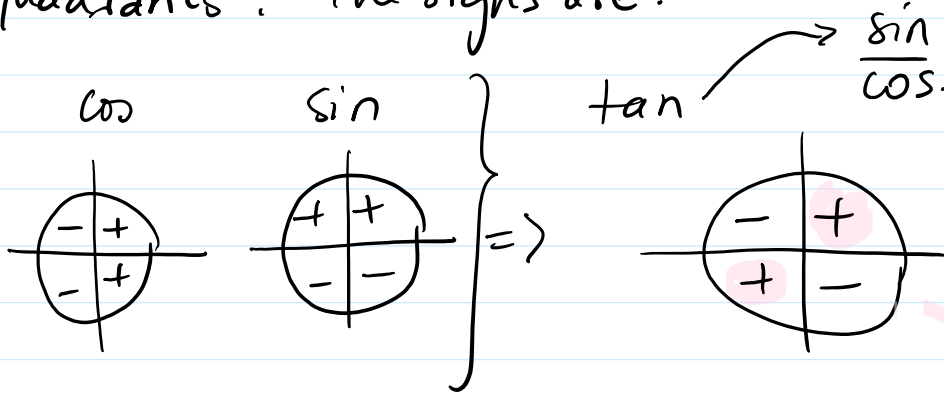
$$\tan^{-1}(0.8) = \theta$$

⇓ use calculator

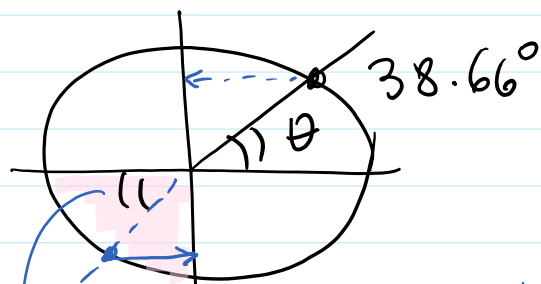
$$\theta = 38.66^\circ$$

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But there are matching angles in other quadrants. The signs are:



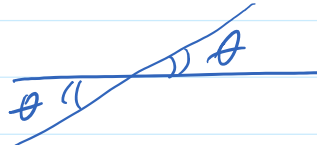
we want the $\oplus$ values.



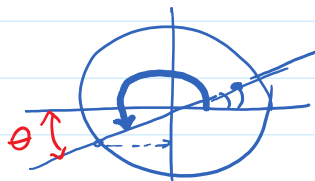
an identical positive value of $\tan$ lives in the 3rd. quadrant

get the same value through symmetry.

must also be θ



the matching angle is



$$\begin{aligned} 180 + \theta &= \\ &= 180 + 38.66^\circ \\ &= 218.66^\circ \end{aligned}$$

$\therefore$ There are two solutions:

$$\{38.66^\circ, 218.66^\circ\}$$