

- IDENTITIES

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

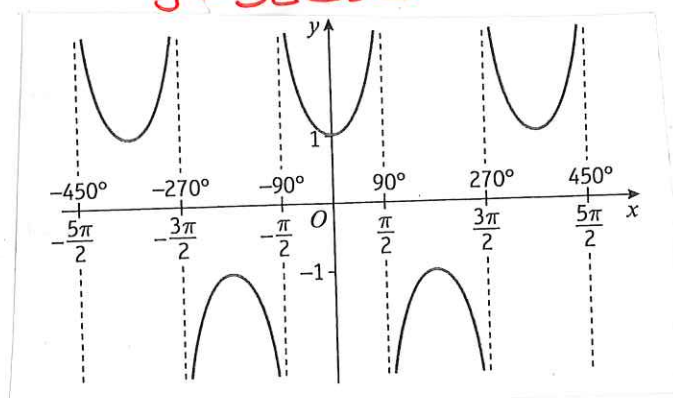
$$\operatorname{cosec} x = \frac{1}{\sin x}$$

$$\cot x = \frac{1}{\tan x} = \frac{\cos x}{\sin x}$$

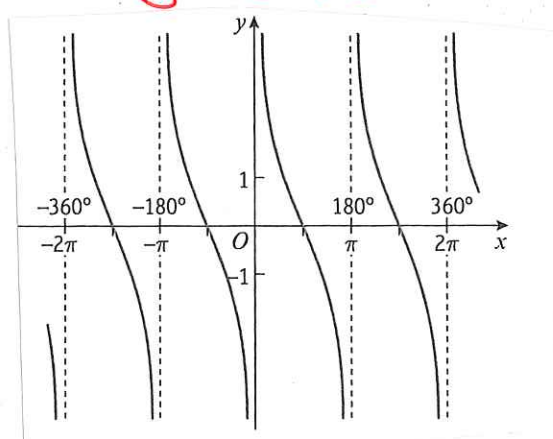
3rd letter is the clue to which identity $\cot x = \frac{1}{\tan x}$

- SEC, COSEC, cot Graphs

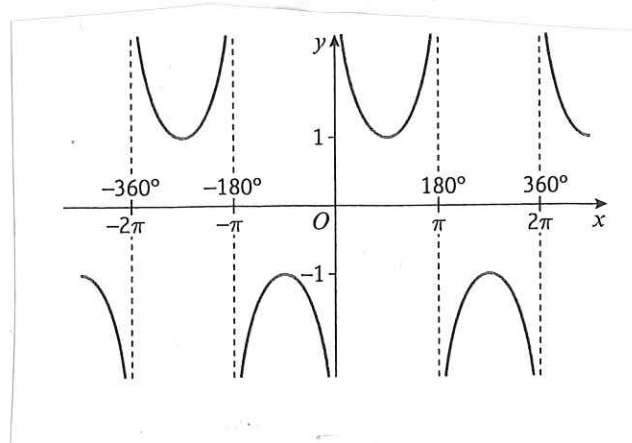
$$y = \sec x$$



$$y = \cot x$$



$$y = \operatorname{cosec} x$$



- MORE IDENTITIES

$$1 + \tan^2 x = \sec^2 x$$

$$1 + \cot^2 x = \operatorname{cosec}^2 x$$

watch out for a common question that involves rewriting the question as a quadratic:

$$4 \operatorname{cosec}^2 \theta - \cot \theta - 9 = 0$$

$$4(1 + \cot^2 \theta) - \cot \theta - 9 = 0$$

$$4 + 4\cot^2 \theta - \cot \theta - 9 = 0$$

$$4\cot^2 \theta - \cot \theta - 5 = 0$$

$$(4\cot \theta - 5)(\cot \theta + 1) = 0$$

Now solve

- $\arcsin x$, $\arccos x$, $\arctan x$ Graphs

