

Name: _____
Student ID: _____

Quiz 8

This quiz is graded out of 10 marks. No books, notes, graphing calculators or cell phones are allowed. You must show all your work, the correct answer is worth 1 mark the remaining marks are given for the work. If you need more space for your answer use the back of the page.

Question 1. pg.150#10e (4 marks)

What angle θ ($0^\circ \leq \theta < 360^\circ$) is co-terminal to 560° .Let θ_c be the co-terminal angle.

$$\theta = \theta_c + k \cdot 360^\circ \quad k \in \mathbb{Z}$$

$$560^\circ = \theta_c + 360^\circ$$

$$560^\circ - 360^\circ = \theta_c$$

$$200^\circ = \theta_c$$

$$k = \left\lfloor \frac{560}{360} \right\rfloor$$

$$= 1$$

$\therefore 200^\circ$ is co-terminal to 560°

Question 2. pg.153#a (6 marks)

Find the values of the other trigonometric functions, if $\tan \theta = \frac{3}{4}$ and $\sin \theta < 0$

$$f(\theta) = \tan \theta = \frac{y}{x} = \frac{3}{4} \Rightarrow \cot \theta = \frac{4}{3}$$

$$\Rightarrow r = \sqrt{x^2 + y^2} \quad \text{where } x=4 \text{ and } y=3$$

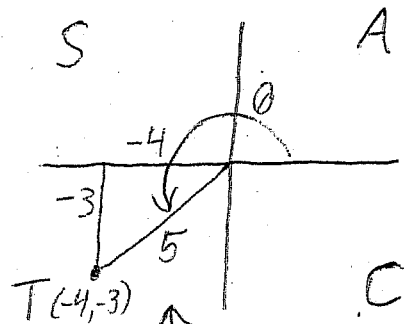
$$= \sqrt{4^2 + 3^2}$$

$$= \sqrt{25}$$

$$= 5$$

$$f(\theta) = \sin \theta = \frac{y}{r} = \frac{-3}{5} \Rightarrow \csc \theta = \frac{-5}{3}$$

$$f(\theta) = \cos \theta = \frac{x}{r} = \frac{-4}{5} \Rightarrow \sec \theta = \frac{-5}{4}$$



tan is positive in this quadrant and $\sin \theta$ is negative in the third quadrant, \therefore the terminal edge is in the third quadrant.