Name: _Yann Lamontagne_
Student ID: _____

Quiz 9

This quiz is graded out of 10 marks. No books, calculators, notes 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.153#4g *(6 marks)* Find the values of the other trigonometric functions, if:

$\csc \theta = 8$ and $\cos \theta < 0$

$\csc \theta > 0$ and $\cos \theta < 0$
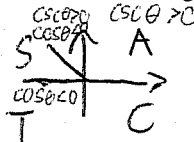
$\csc \theta = \dfrac{r}{y} = \dfrac{8}{1} \longrightarrow \sin \theta = \dfrac{1}{8}$

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

$8 = \sqrt{x^2 + 1^2}$
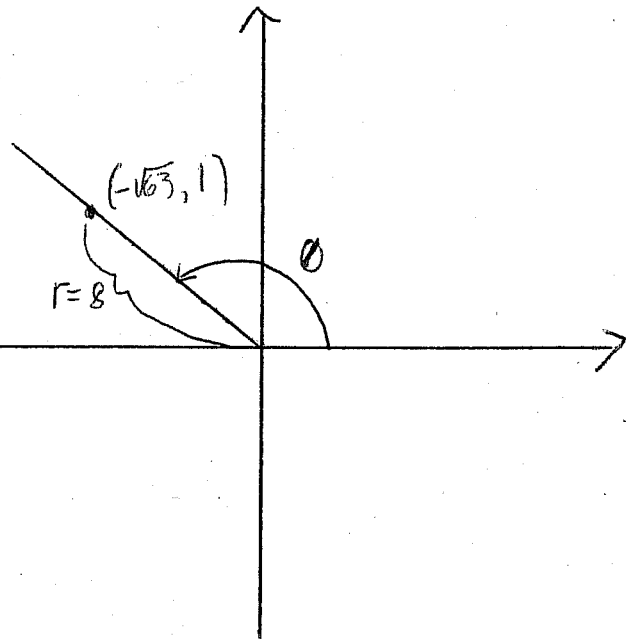
$64 = x^2 + 1$

$63 = x^2$

$\pm \sqrt{63} = x$

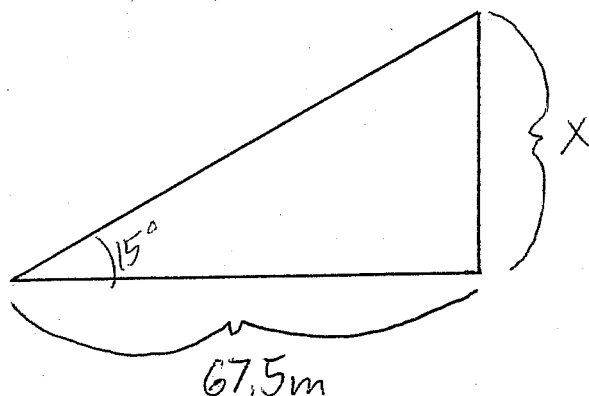$\cos \theta = \dfrac{x}{r} = \dfrac{-\sqrt{63}}{8}$

$\sec \theta = \dfrac{8}{-\sqrt{63}}$

$\tan \theta = \dfrac{y}{x} = \dfrac{1}{-\sqrt{63}}$

$\cot \theta = -\sqrt{63}$

Question 2. pg.142#36 *(4 marks)* When a boat is 67.5 m from shore the angle of elevation to the top of a lighthouse is 15°. What is the height of the lighthouse?

$\tan 15° = \dfrac{x}{67.5}$

$x = 67.5 \tan 15°$

$\doteq 18.09 \, m$

∴ the height of the lighthouse 18.09 m.