## $\mathrm{MA}\ 158$

Quiz 11

28 Οκτώβριος 2016

**Instructions:** Show all work, with clear logical steps. No work or hard-to-follow work will lose points.

**Problem.** (4 points) Find the exact value of the remaining trigonometric functions for an acute angle  $\theta$  in the given quadrant.

$$\sec \theta = 6$$
, in Quadrant IV.

Solution. If  $\sec \theta = 6$ , then

$$\cos\theta = \frac{1}{\sec\theta} = \frac{1}{6} = \frac{x}{h}.$$

So then  $y^2 = h^2 - x^2 = 36 - 1 = 35$  gives us  $y = -\sqrt{35}$  in this case, since we are in Quadrant IV.



Now

$$\sin \theta = -\frac{\sqrt{35}}{6} \qquad \qquad \csc \theta = -\frac{6}{\sqrt{35}}$$
$$\tan \theta = -\sqrt{35} \qquad \qquad \cot \theta = -\frac{1}{\sqrt{35}}$$

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