Math 1613 - Trigonometry
Quiz #4 - 2011.08.30
Solutions

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1. How much information does one need to be given to find the remaining values of the three angles and sides of a right triangle?

   One possibility is: the length of one side and the measure of one non-right angle. Another possible answer is the lengths of two sides, although this one is a possibility we have not yet covered.

2. Find the values of $\sin(\theta)$, $\cos(\theta)$ and $\tan(\theta)$ for the angle $-510°$.

   First we need to find the reference angle, to $-510°$. If we add $720°$ to $-510°$, we get $210°$, which is located in the third quadrant, and has reference angle of $30°$. Note that both sine and cosine are negative in this quadrant. So we have

$$\sin\left(-510°\right) = -\sin\left(30°\right) = -\frac{1}{2}$$
$$\cos\left(-510°\right) = -\cos\left(30°\right) = -\frac{\sqrt{3}}{2}$$
$$\tan\left(-510°\right) = \tan\left(30°\right) = \frac{1}{\sqrt{3}}$$