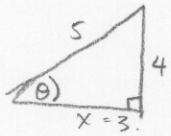
MATH 6 – QUIZ 6
16 MARCH 2012

Name: SOLUTIONS

NO CALCULATORS

1. Suppose $\sin\theta = \frac{4}{5}$ and θ is an acute angle (that is, $0 < \theta < \pi/2$). Find $\cos\theta$ and $\tan\theta$.

$\sin\theta = \frac{\text{opp}}{\text{hyp}}$



$x^2 + 4^2 = 5^2$

$x^2 = 25 - 16$, so $x = 3$.

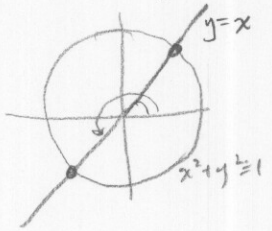
$\cos\theta = \frac{\text{adj}}{\text{hyp}} = \frac{3}{5}$

$\tan\theta = \frac{\text{opp}}{\text{adj}} = \frac{4}{3}$.

2. Suppose $\tan\theta = 1$. What are all possible values of θ between 0 and 2π?

If $\tan\theta = 1$, $\sin\theta = \cos\theta$ since $\tan\theta = \frac{\sin\theta}{\cos\theta}$.

We can either realize that $\theta = \frac{\pi}{4}$ and $\theta = \frac{5\pi}{4}$ satisfy this, or use that $x = y$ and (x, y) are on the unit circle to draw:



and see that the angles we want are again

$\theta = \frac{\pi}{4}$ and $\theta = \frac{5\pi}{4}$