①

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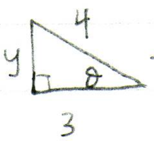
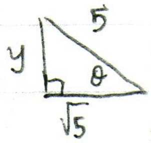
7.) $\cos\theta = \frac{3}{4} \rightarrow$ 

$\rightarrow 3^2 + y^2 = 4^2$

$\rightarrow y^2 = 16 - 9 = 7$

$\rightarrow y = \sqrt{7}$

Thus, $\sin\theta = \pm\frac{\sqrt{7}}{4}$. Since θ is in quadrant I, $\sin\theta > 0$, so it must be $\sin\theta = \frac{\sqrt{7}}{4}$

9.) $\cos(-\theta) = \cos(\theta) = \frac{\sqrt{5}}{5} \rightarrow$ 

$\rightarrow (\sqrt{5})^2 + y^2 = 5^2$

$\rightarrow 5 + y^2 = 25$

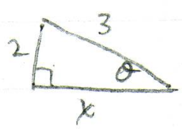
$\rightarrow y^2 = 20$

$\rightarrow y = \sqrt{20}$

Thus $\sin\theta = \frac{\pm\sqrt{20}}{5}$. Since $\cos(\theta) > 0$ and $\tan(\theta) < 0$,

θ must lie in quadrant III. Thus,

$\sin\theta = -\frac{\sqrt{20}}{5}$.

25) $\boxed{\begin{matrix}\sin\theta = \frac{2}{3} \\ \downarrow \\ \csc\theta = \frac{3}{2}\end{matrix}}$ (θ in Q II) $\longrightarrow$ 

$\rightarrow x^2 + 2^2 = 3^2$

$\rightarrow x^2 = 5$

$\rightarrow x = \sqrt{5}$

Thus, $\boxed{\begin{matrix}\cos\theta = \frac{\sqrt{5}}{3} \\ \downarrow \\ \sec\theta = \frac{3}{\sqrt{5}}\end{matrix}}$; $\boxed{\begin{matrix}\tan\theta = \frac{\sin\theta}{\cos\theta} = \frac{\frac{2}{3}}{\frac{\sqrt{5}}{3}} = \frac{2}{\sqrt{5}} \\ \downarrow \\ \cot\theta = \frac{\sqrt{5}}{2}\end{matrix}}$