Math 1613 - Trigonometry

Quiz #13 - 2011.09.29

Solutions

---

1. Does $\cos(A - B) = \cos(A) - \cos(B)$?

No, the cosine of a difference of angles is not equal to the difference of cosine of the angles. We do have, however, the identity

$$\cos(A - B) = \cos(A)\cos(B) + \sin(A)\sin(B)$$

2. Find $\sin(\theta)$ if $\cos(\theta) = \frac{4}{5}$, and $\tan(\theta) < 0$.

Remember that $\sin^2(\theta) + \cos^2(\theta) = 1$, so we have

$$\begin{aligned} \sin(theta) &= \pm\sqrt{1 - \left(\frac{4}{5}\right)^2} \\ &= \pm\frac{3}{5} \end{aligned}$$

Since θ must lie in Quadrant IV, we have that $\sin(\theta) = -\frac{3}{5}$.