# Homework Section 5.2/5.3 - Due 26th October

1. #12 on page 212. $(\sin\alpha - \cos^{\alpha})^2 = \sin^2\alpha + \cos^2\alpha - 2\sin\alpha\cos\alpha = 1 - \sin 2\alpha$
2. #32 on page 212. $\frac{1}{\tan^2\alpha} + \cot\alpha\tan\alpha = \cot^2\alpha + 1 = \csc^2\alpha$.
3. #8 on page 222. $\cos(-105^\circ) = \cos(105^\circ) = \cos(60^\circ + 45^\circ) = \cos(60^\circ)\cos(45^\circ) - \sin(60^\circ)\sin(45^\circ) = \frac{1-\sqrt{3}}{2\sqrt{2}}$.
4. #18 on page 222. $\sin(\frac{2\pi}{5}) = \cos(\frac{\pi}{2} - \frac{2\pi}{5}) = \cos(\frac{\pi}{10})$.
5. #36 on page 222. $\cos\theta = \sin(3\theta + 10^\circ)$ so one solution could be $\theta + 3\theta + 10^\circ = 90^\circ$ so $\theta = 20^\circ$.
6. #44 on page 222. $\cos(90^\circ + \theta) = \cos(90^\circ)\cos(\theta) - \sin(90^\circ)\sin(\theta) = -\sin\theta$.

Extra Practice on Page 212-213 (Do NOT turn in, though I'd be happy to discuss the problems outside of class):
Level 1: 36, 38, 39, 46
Level 2: 45, 47, 49, 51, 57, 60
Level 3: 54, 62, 64, 67, 68