

Extra Problems for November 25, 2012

Calculate the following:

1. $e^{\frac{\pi i}{6}}$
2. $e^{\frac{3\pi i}{2}}$

You can do the following for extra credit (but do it, it will be fun):

3. Using the Euler's Formula show that:

$$\cos(3x) = \cos^3(x) - 3 \sin^2(x) \cos(x)$$

$$\sin(3x) = 3 \sin(x) \cos^2(x) - \sin^3(x)$$

4. Show the above by using the sum and double angle formulas for sin and cos.