

Extra Problems for December 3, 2009

Calculate the following:

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

You can do the following for extra credit:

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.