1. Evaluate the following expressions and write your answer in the form $a + bi$.

    (a) $\dfrac{3}{1 - 4i}$

    (b) $(3 - 2i)(-4 - i)$

2. Find the equation of the plane passing through the point $(1, 0, 5)$ and parallel to the plane $z = 2x + 3y$.

3. (a)   Write Taylor's Series for the function $f(x) = \cos x$ at $x_0 = \pi$.

    (b)   Estimate the values of x for which the corresponding Taylor polynomial of order 2 is a accurate to within .01.

4. What is the equation for the curve which is the intersection of the vertical plane P_1 through $(0, 0, 0)$ and $(1, 2, 0)$ and the plane P_2 given by $2x + 6y + 3z = 4$. To maximize partial credits first write down a clear description of P_1.

5. Evaluate the following expressions and write your answer in the form $a + bi$.

    (a) $(1 + i)^{70}$

    (b) e^{4+3i}