Some problems for review

Chapter 4 1) Form a polynomial having degree 4 and zeros -1, 2 and $2-4i$.

2) Find all complex zeros of $f(x) = 3x^4 - x^3 - 9x^2 + 159x - 52$

Chapter 9

3) Write the equation $r = \cos\theta - \sin\theta$ in rectangular form.

4) Find a polar cordinates of the point $(x, y) = (-1, \sqrt{3})$ with $\pi \leq \theta < 3\pi$.

5) Find the rectangular coordinate of the point $(r, \theta) = (2, \frac{5\pi}{6})$.

6) Write the complex number $-4i$ in polar form.

7) Write the ~~equation~~ expression $(\sqrt{3} + i)^6$ in the standard form $a+bi$.

Chapter 10

8) Find the verter, focus and directrix of the parabola
$$(x+1)^2 = -8(y-2)$$

9) Find the center, foci and vertices of the ellipse
$$9(x+2)^2 + 25(y-1)^2 = 81.$$

10) Find the center, foci, vertices and asymptotes of the hyperbola
$$4x^2 - 8x + 3 - y^2 = 0$$

Chapter 12

11) Find the 1st term, common difference and give a recursive formula for the arithmetic sequence whose the 5th term is -23 and the 11th term is -53.

12) Find the n^{th} term of the geometric ~~series~~ sequence

$$3, 6, 12, 24, 48, \ldots$$

13) Determine whether the geometric series

$$3 - \frac{3}{5} + \frac{3}{25} - \frac{3}{125} + \cdots$$

converges or not. If it converges, find its sum.