

## Algebra 3 Assignment # 5

Find all factors and roots:

(1)  $P(x) = x^4 - 7x^3 + 14x^2 - 38x - 60$ ;  $1 + 3i$

Find the polynomial with the given roots:

(2)  $6, -1, 1 \pm 3i$

(3)  $-6, 1, -\frac{1}{2}, \pm 2i$

**Answers:**

1.  $(x^2 - 2x + 10)(x - 6)(x + 1)$ ; Roots  $1 \pm 3i, -1, 6$

2.  $x^4 - 7x^3 + 14x^2 - 38x - 60$

3.  $2x^5 + 11x^4 + x^3 + 38x^2 - 28x - 24$