

## Assignment

Date \_\_\_\_\_ Period \_\_\_\_\_

Find all roots.

1)  $x^3 - 3x^2 - 4x + 12 = 0$

2)  $x^3 - 5x^2 - 2x + 10 = 0$

3)  $x^3 - 4x^2 + 4x - 16 = 0$

4)  $x^3 + 5x^2 + 5x + 25 = 0$

5)  $x^4 - 4x^3 + x^2 - 4x = 0$

6)  $x^3 - 2x^2 - 3x + 6 = 0$

Write a polynomial function of least degree with integral coefficients that has the given zeros.

7)  $-2$  mult. 2,  $\frac{5}{2}$ ,  $-\frac{2}{3}$

8)  $-\frac{2}{5}$ ,  $\frac{1}{5}$ ,  $-\frac{4}{5}$

9)  $-4, -3, 0, \frac{5}{3}$

10)  $5, 2i$

11)  $-3i, 2\sqrt{2}$

12)  $-\frac{1}{4}$  mult. 2,  $\sqrt{2}$

13)  $2, -2, -2 + \sqrt{7}$

14)  $-4, 3 + 2i$

15)  $-\frac{5}{2}, -1, i$