Math 1050 3.6 Polynomials with Complex Solutions	Name

1-5 Factor completely, and write as a product of linear factors.

1. $P(x) = x^3 + 8$

2. $P(x) = x^4 + 6x^2 + 9$

3. $P(x) = x^3 - x^2 + x$

4. $P(x) = x^3 + x^2 + 9x + 9$

5. $P(x) = x^4 + 10x^2 + 25$

6. Find a polynomial that has degree 3 and has zeros at 3, and 2i.

7. Find a polynomial that has degree 4 and has zeros at 4 with a multiplicity of 2, and 1-3i.

8. Find a polynomial that has degree 4 and has zeros at 2i and 3i.

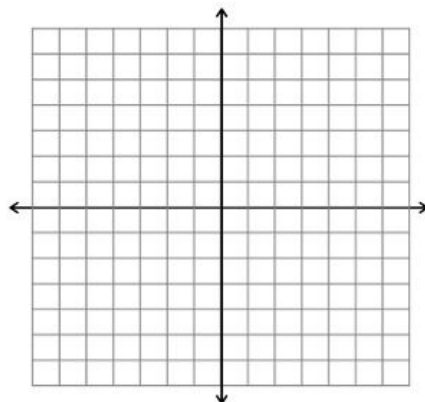|	
9. Find all zeros of the polynomial. $P(x) = x^3 - 2x^2 + 2x - 1$	10. Find all zeros of the polynomial. $P(x) = x^3 + 7x^2 + 18x + 18$
11. Find all zeros of the polynomial. $P(x) = x^3 - x - 6$	12. Find all zeros of the polynomial. $P(x) = 2x^3 + 7x^2 + 12x + 9$
13. Find all zeros of the polynomial. $P(x) = x^4 + x^3 + 7x^2 + 9x - 18$	14. Use the quadratic equation to find the solutions to the equation: $ix^2 - 2x + i = 0$
15. Find all the zeros then graph: $P(x) = 2x^3 - 3x^2 - 2x + 3$	

16. Find all the zeros then graph:
$P(x) = 2x^4 - 7x^3 + 3x^2 + 8x - 4$
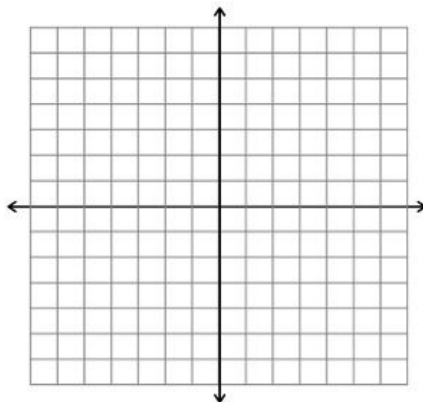
17. Find all the zeros then graph:
$P(x) = x^4 - 8x^3 + 18x^2 - 27$