Math 3A Name_____



# 5.3 Solving Using Divison

Period____

**Factor AND solve each. One solution has been given. Use synthetic division to help you.**

1) $x^4 - 4x^3 - 6x^2 + 4x + 5 = 0;\ 5$

2) $x^4 - 3x^3 - 11x^2 + 3x + 10 = 0;\ 5$

3) $x^4 + 7x^3 + 14x^2 + 28x + 40 = 0;\ -2$

4) $x^4 - 9x^3 + 24x^2 - 36x + 80 = 0;\ 5$

5) $x^4 + 2x^3 - 3x^2 + 10x - 40 = 0;\ 2$

6) $x^4 - 8x^3 + 13x^2 + 16x - 30 = 0;\ 5$

**Factor AND solve each. One factor has been given. Use polynomial long division to help you.**

7) $x^4 - x^3 - 7x^2 - 5x - 60 = 0;\ x + 3$

8) $x^4 + 2x^3 - 13x^2 - 10x + 40 = 0;\ x - 2$

9) $x^4 + 5x^3 + x^2 - 25x - 30 = 0;\ x + 2$

10) $x^4 + 8x^3 + 10x^2 - 40x - 75 = 0;\ x + 3$