

Graphing Calculator Section

1. The polynomial $1600x^3 + 1200x^2 + 800x$ represents your savings, with interest, from a job after 3 years. The annual interest rate equals $x - 1$. Find the interest rate needed so that you will have \$4000 at the end of the three years.

2. Solve by graphing. Include a sketch, window, what you made y_1 & y_2 and the zeros.

a) $2x^2 - 4x = 10x - 1$

b) $2x^3 - 15x^2 + 4x + 21 = -x^2 + 20$

Non Graphing Calculator Section

3. Graph by finding zeros, stating any multiplicities, and using EB. $f(x) = x^4 - 5x^2 + 4$

4. Verify and prove the following identity: $(a - 2b)^3 = a^3 - 6a^2b + 12ab^2 - 8b^3$

5. Verify and Prove the following identity algebraically.

$$(a-b)^3 = a^3 - b^3 - 3a^2b + 3ab^2$$

Factor each completely. DO NOT SOLVE!

6) $x^3 + 125$

7) $x^4 + 8x^2 - 20$

8) $x^3 - 64$

9) $x^4 - 5x^2 + 4$

10) $x^4 - 1$

11) $a^3 + 64$

12) $x^4 - 8x^2 + 7$

13) $u^3 + 8$

Solve each of the equations. Find all solutions.

14) $x^4 - 14x^2 + 45 = 0$

15) $x^4 + 6x^2 + 8 = 0$

16) $8x^3 - 1 = 0$

17) $x^3 - 27 = 0$