

3.1 Factoring Higher Degrees

Date _____

Factor each.

1) $x^3 + 7x^2 + 10x = 0$

2) $x^3 - 8x^2 + 16x = 0$

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

4) $x^3 - 6x^2 + 8x = 0$

5) $x^3 + 10x^2 + 25x = 0$

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

7) $x^6 + 5x^4 - 9x^2 - 45 = 0$

8) $x^3 - x^2 - 2x = 0$

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

10) $x^3 - 6x^2 + 5x = 0$

$$11) x^4 - 10x^2 + 9 = 0$$

$$12) x^3 - 5x^2 - 2x + 10 = 0$$

$$13) x^5 - 2x^3 - 3x = 0$$

$$14) x^3 + 3x^2 + 3x + 9 = 0$$

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

$$16) x^4 + 11x^2 + 30 = 0$$

$$17) x^3 - 4x^2 + 5x - 20 = 0$$

$$18) x^4 - 10x^2 + 16 = 0$$

$$19) x^6 - 2x^4 - 25x^2 + 50 = 0$$

$$20) x^5 - 3x^3 - 54x = 0$$

$$21) x^6 + 3x^4 - x^2 - 3 = 0$$

$$22) x^3 + 2x^2 + 2x + 4 = 0$$

Answers to 3.1 Factoring Higher Degrees

- 1) $x(x+5)(x+2) = 0$ 2) $x(x-4)^2 = 0$ 3) $x(x+4)(x-3) = 0$ 4) $x(x-2)(x-4) = 0$
5) $x(x+5)^2 = 0$ 6) $x(x-3)(x-1) = 0$ 7) $(x^2+5)(x^2-3)(x^2+3) = 0$
8) $x(x+1)(x-2) = 0$ 9) $(x+2)(x^2-3) = 0$ 10) $x(x-5)(x-1) = 0$
11) $(x-1)(x+1)(x-3)(x+3) = 0$ 12) $(x-5)(x^2-2) = 0$
13) $x(x^2+1)(x^2-3) = 0$ 14) $(x+3)(x^2+3) = 0$
15) $(x^2-2)(x-1)(x+1)(x^2+1) = 0$ 16) $(x^2+6)(x^2+5) = 0$
17) $(x-4)(x^2+5) = 0$ 18) $(x^2-2)(x^2-8) = 0$ 19) $(x^2-2)(x^2-5)(x^2+5) = 0$
20) $x(x^2+6)(x-3)(x+3) = 0$ 21) $(x^2+3)(x-1)(x+1)(x^2+1) = 0$
22) $(x+2)(x^2+2) = 0$