

First & Last Name _____ Date _____ Period _____

6.5 Solving Polynomials Practice

Directions: Solve by factoring. Simplify all irrational and complex solutions.

1. $12x^3 - 3x^2 = 0$

$$x = 0, \frac{1}{4}$$

2. $9r^4 - 16 = 0$

$$r = -\frac{2\sqrt{3}}{3}, \frac{2\sqrt{3}}{3}, -\frac{2i\sqrt{3}}{3}, \frac{2i\sqrt{3}}{3}$$

3. $2p^4 = 9p^2$

$$p = 0, \frac{-3\sqrt{2}}{2}, \frac{3\sqrt{2}}{2}$$

4. $x^3 - 8x^2 + 16x = 0$

$$x = 0, 4$$

5. $x^4 + x^2 - 42 = 0$

$$x = -\sqrt{6}, \sqrt{6}, -i\sqrt{7}, i\sqrt{7}$$

6. $2x^3 - 16x^2 - 40x = 0$

$$x = -2, 0, 10$$

$$7. x^4 - 16x^2 = x^2 + 18$$

$$8. 4m^4 + 35m^2 = 9$$

$$x = -3\sqrt{2}, 3\sqrt{2}$$

$$m = -\frac{1}{2}, \frac{1}{2}, -3i, 3i$$

$$9. x^3 + 3x^2 = 24x + 72$$

$$10. (2k^3 - 5k^2) + (40k - 100) = 0$$

$$x = -2\sqrt{6}, -3, 2\sqrt{6}$$

$$k = \frac{5}{2}, -2i\sqrt{5}, 2i\sqrt{5}$$