Solving Polynomials by Factoring Assignment Name: _____

Solve by factoring. Indicate if a root has a multiplicity other than one.

1) $2x^4 + 16x^3 + 32x^2 = 0$

2) $8x^3 - 4x^2 - 50x + 25 = 0$

3) $2x^3 - 10x^2 - 100x = 0$

4) $x^3 + 3x^2 - 4x = 12$

5) $9x^2 - 16 = 0$

6) $3x^2 = -11x - 6$

7) $x^3 - 4x^2 + 4x - 16 = 0$

8) $2x^5 + 4x^4 = 4x^3 + 8x^2$

Solve using the quadratic formula.

9) $x^2 + 6x = 8$

10) $3x^3 - 4x^2 = 8x$

Write the polynomial in factored form given the zeros and multiplicity. State the degree of the polynomial.

11) 5, 3, -6

12) -2 multiplicity of 2, 5, -9

13) 6 is a triple root, -9

14) 9, 8, -7, 3 multiplicity of 3