Name: _____ bell work

Factor completely:

1.) $12x^2 - 75$

2.) $8x^3 - 125$

3.) $6x^2 - 5x - 6$

4.) $2x^2y^2 + 5x^2 - 2y^2 - 5$

Solve:

5.) $3x^3 - 33x^2 - 36x = 0$

6.) $8x^5 + 32x^3 = -x^2 - 4$

7.) $4x^2 + 4x - 15 = 0$

8.) $2x^2 + 12 = -4$

State the degree , end behavior, roots and multiplicity, and sketch the graph.

9.) $y = -x(x + 3)^2(x - 4)^3$

10.) $y = x^2(x - 5)^3(x + 4)^2$

Write the equation of the polynomial in standard form:

11.) x = 3 multiplicity of 2 and x = 5i

12.) x = -3 + 2i and x = -1

Simplify:

13.) $\dfrac{24-8m}{m^2-9m+18} \cdot \dfrac{m+5}{9m^2+45m}$

14.) $\dfrac{6}{k-5} - \dfrac{2}{5k-4}$

15.) $\dfrac{\dfrac{1}{x} + \dfrac{x^2}{x-3}}{\dfrac{x-3}{4} - \dfrac{1}{4}}$

16.) Solve: $\dfrac{x-1}{3x} - \dfrac{x+4}{2x^2} = \dfrac{1}{3}$