PreCalc
Factoring/Polynomial Review Worksheet (A.3)

Name: _____
Date: _____ Period: _____

Factor each of the following. Show all work.

1) $x^2 - 3x + 2$

2) $3x^2 + x - 14$

3) $9x^2 + 10x + 1$

Sum or Difference of Two Squares

4) $x^2 - 6x + 9$

5) $x^2 + 10x + 25$

6) $1 - 4x^2$

7) $64x^4 - 81$

Sum or Difference of Cubes

8) $x^3 + 125$

9) $8x^3 - 27$

Grouping

10) $x^3 - 2x^2 - 3x + 6$

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

12) $6 + 2x - 3x^3 - x^4$

Completely Factor

13) $x^3 - 4x^2$

14) $-2x^2 - 4x + 2x^3$

15) $2y^3 - 7y^2 - 15y$

Determine if it is a polynomial. IF it is a polynomial write it in standard form, then identify the degree and leading coefficient. IF it is not a polynomial explain why not.

16) $f(x) = 9x - \frac{3}{5}x^3 + 3x^4 - 6x + 3$

17) $f(x) = 9x^3 - x + \frac{4}{x^3} + 8$

18) $f(x) = 4x^2 - 5x^7 - 2 + 3x$

True or False. If false fix the problem.

19) $\frac{21x}{4} - \frac{(y+5)}{2} = \frac{21x - 2y - 5}{4}$

20) $\frac{10x+5}{20x^2+5x} = \frac{2x}{4x^2+x}$

Simplify

21) $(8x+7) - (3x^2 - 4x + 2)$

22) $(-2x^2 + 9x) - [10x^2 + (5x - 3)]$

Find the product

23) $(2x + y - 5)(2x + y + 5)$

24) $(5x + 9)(5x - 9)$