Name: _____

Paper HW #14 Due 11/17/15

M110

Instructions: *Complete these problems for homework due on the date above. The problems should look very similar to those that were covered during our class meeting covering §8.1,8.4 & §12.1-12.2. As always show all work and please box your final answer.*

1. Factoring the following PST's completely.

a) $x^2 + 22x + 121$ b) $25x^2 - 70x + 49$ c) $8x^2 + 8x + 2$

2. Factor the following difference of squares completely.

a) $x^2 - 144$ b) $x^3 - 9x$ c) $x^2 - 64y^2$

3. Factor each of the following trinomials completely.

a) $x^2 + 8x - 48$ b) $x^2 - 6x - 16$ c) $x^2 + 7x + 12$

d) $x^2 - 14x + 45$ e) $x^3 + 7x^2 - 18x$ f) $2x^2 - 22x + 60$

4. Which of the following polynomials are prime? Circle all that are prime.

a) $x^2 - x + 6$ b) $2x^6 - 18$ c) $x^2 + 4$ d) $x + 1$

5. Simplify each of the following rational expressions.

a) $\dfrac{y + 5}{y^2 - 13y + 40}$

b) $\dfrac{x^2 + 4x - 21}{x^2 + 2x - 15}$

c) $\dfrac{x^3 + 8x^2 - 4x - 32}{x^2 - 4}$

d) $\dfrac{2x + 14}{2x^3 + 14x^2 - 6x - 42}$

e) $\dfrac{4x^2 - 20x + 25}{4x^2 - 25}$

6. Multiplying and dividing rational expressions is still an exercise in factoring and canceling.

a) $\dfrac{25x^2 - 10x + 1}{15} \cdot \dfrac{5}{10x - 2}$

b) $\dfrac{3a}{4a^2 - 8a - 60} \div \dfrac{4a^3}{a - 5}$