NAME _____

MAT 150 – Homework 21
Sections 6.5 and 6.6

Directions: Show all work and write your final answer in the space provided.

1. Find the partial fraction decomposition of: $\dfrac{3x}{(x+2)(x-1)}$ 1. _____

2. Solve: $\begin{aligned} y &= x^2+1 \\ y &= 4x+1 \end{aligned}$ 2. _____

3. Find the partial fraction decomposition of: $\dfrac{1}{(x+1)(x^2+4)}$ 3. _____

4. Solve: $\begin{aligned} x^2+y^2 &= 8 \\ x^2+y^2+4y &= 0 \end{aligned}$ 4. _____

5. Find the partial fraction decomposition of: $\dfrac{x+1}{x^2(x-2)}$ 5. _____

6. Solve: $\begin{aligned} y &= \sqrt{4-x^2} \\ y &= 2x+4 \end{aligned}$ 6. _____

7. Find the partial fraction decomposition of: $\dfrac{x^2+x}{(x+2)(x-1)^2}$ 7. _____

8. Solve: $\begin{aligned} x^2 &= y \\ xy &= 1 \end{aligned}$ 8. _____

9. Find the partial fraction decomposition of: $\dfrac{10x^2+2x}{(x-1)^2(x^2+2)}$ 9. _____

10. Solve: $\begin{aligned} x^2+y^2&=16 \\ x^2-2y&=8 \end{aligned}$ 10. _____

11. Solve: $\begin{aligned} xy&=1 \\ -2x+y&=1 \end{aligned}$ 11. _____

12. Find the partial fraction decomposition of: $\dfrac{x^2-11x-18}{x(x^2+3x+3)}$ 12. _____

13. Solve: $\begin{aligned} x^2+y^2&=10 \\ xy&=3 \end{aligned}$ 13. _____

14. Find the partial fraction decomposition of: $\dfrac{x^2-x-8}{(x+1)(x^2+5x+6)}$ 14. _____

15. Solve: $\begin{aligned} x^2-y^2&=21 \\ x+y&=7 \end{aligned}$ 15. _____