Math 105 - Homework 4 **Name:** _____

Find all solutions to the following equations.

1. $x^2 - 5x + 4 = 0$

2. $x^2 - 4x + 4 = 0$

3. $x^2 - x = 6$

4. $x^2 + 35 = 12x$

5. $y^2(y-5) - 4(y-5) = 0$

6. $4x^2(x-1) - 12x(x-1) = 0$

7. $5x^2 - 10x = 15$

8. $\dfrac{3x^2 - 10x + 9}{x^2} = 2$

9. $y^2 - 5 = 0$

10. $u^4 - 5u^2 + 4 = 0$

11. $x^3 + x^2 - 6x = 0$

12. $\dfrac{10}{x} = x - 7$

Hint: The next two problems look similar, but require very different techniques.

13. $\dfrac{x^2 + 8x + 7}{x^2 + 7x + 10} = 1$

14. $\dfrac{x^2 + 8x + 7}{x^2 + 7x + 10} = 0$

15. $\dfrac{2x^3 + 4x^2 + 2x}{x - 5} = 0$

16. $\dfrac{10}{x - 3} - \dfrac{10}{x + 2} = 1$

17. $2x^2 + x - 6 = 0$

18. $5x^2 + 7x = 6$

19. $2w^5 + 24w^4 + 72w^3 = 0$