Math 1271 Test #2 Review

Section 1: Factoring & Fractions

Find the Greatest Common factor:

1. $8a^3 - 30a^2b + 16ab^2$
2. $18a^3c - 3b^2c^3 + 10b^2c^2$

Factor completely:

3. $x^4 - y^4$
4. $16x^2 - 9$

Factor the following Trinomials:

5. $A^4 - 20A^2 + 100$

6. $3f^2 - 16f + 5$

Perform the indicated operation and simplify as much as possible:

7. $\frac{6x^2-7x-3}{4x^2-8x+3}$

8. $\left(\frac{x^4-1}{8x+16}\right)\left(\frac{2x^2-8x}{x^3+x}\right)$

9. $\frac{x^2-8x+16}{x^2-16}$

10. $\frac{9B^2-16}{B+1} \div (4-3B)$

11. $\frac{4x+4y}{35x^2} \times \frac{28x}{x^2-y^2}$

12. $\frac{\frac{3x}{7x^2+13x-2}}{\frac{6x^2}{x^2+4x+4}}$

13. $\frac{x+1}{2x} - \frac{y-3}{4y} - \frac{2-x}{xy}$

14. $\frac{2}{x+2} - \frac{3-x}{x^2+2x} + \frac{1}{x}$

15. $\frac{2}{n^2+4n+4} - \frac{3}{4+2n}$

16. Solve the following equations:

    a. $\frac{x}{2} - 3 = \frac{x-10}{4}$

    b. $\frac{2x}{2x^2-5x} - \frac{3}{x} = \frac{1}{4x-10}$

17. Solve for y if $k(2-y) = y(2k-1)$

18. The speed v of a satellite can be found from the equation $v^2 = \frac{GmM}{r^2} \div \frac{m}{r}$. Simplify the right side of the equation and solve for v.

19. Solve for m in the following equation: $W = mgh_2 - mgh_1$