1.9 Practice Set

1. What is a "least common denominator", or LCD? Give an example.
2. What preparation is required before adding or subtracting rational expressions?
3. When subtracting, sometimes you must _____ the negative sign in order to change the signs for all of the terms in the second numerator.
4. If one of the denominators is $(a-b)$ and the other is $(a-b)^2$, what is the LCD?

Perform the indicated operation and simplify each of the following.

5. $\dfrac{5}{xz^5} - \dfrac{15}{xz^5}$

6. $\dfrac{7}{x-7} + \dfrac{x}{x-7}$

7. $\dfrac{1}{x-4} - \dfrac{19-3x}{(x-4)(x+3)}$

8. $\dfrac{1}{q-p} - \dfrac{1}{p-q}$

9. $\dfrac{x+9}{4-x} + \dfrac{9}{x-4}$

10. $\dfrac{y+3}{y^2+7y+12} - \dfrac{5}{y^2-9}$

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

12. $\frac{x}{2x^2-3x-9} - \frac{x+1}{3x^2-7x-6}$

13. $\frac{4}{a^2+8a+16} + \frac{7}{a^2-16}$

14. $\frac{2}{2x^5y^2} + \frac{6}{2x^5y^2}$

15. $\frac{4}{3x-15} + \frac{3}{2x-10}$

16. $\frac{-4}{x^2-3x} - \frac{9}{x^3-3x^2}$

17. $\frac{4}{x^2-64} - \frac{2}{x^2+16x+64}$

18. $\frac{4}{x+2} - \frac{3x}{3x+6} + \frac{3}{2x+4}$

19. $\frac{2}{x+2} + \frac{3}{x^2+4x+4} - \frac{x}{x^2-4}$

20. $\frac{x}{x^2-49} + \frac{7}{x^2-14x+49} - \frac{1}{x+7}$

21. $\left(\frac{3}{x} + \frac{3}{5}\right) - \left(\frac{3}{x} - \frac{3}{5}\right)$

22. $\left(\frac{2}{5} - \frac{1}{x}\right) \cdot \left(\frac{2}{x} + \frac{1}{5}\right)$

23. $\frac{6}{x}\left(\frac{2}{x+6} - \frac{2}{x-6}\right)$

24. $y^{-1} + (2y)^{-1}$

25. $3y^{-2} - 5y^{-1}$

Distributed Practice Problems

Factor each of the following polynomials.

26. $11x^3 - 7x^2 - 18x$

27. $27x^3 + 125y^3$

Factor Solve each of the following equations for the indicated variable.

28. $T = M(9 + FG)$ for G

29. $W = 2rg^2 - 7rx$ for x

30. $|9n + 3| + 19 = -6$