PROBLEM SET 9-4
(Rational Expressions)

Multiply or divide. State any restrictions on the variable.

1. $\frac{4x^2}{5y} \cdot \frac{7y}{12x^4}$

2. $\frac{2x^4}{10y^2} \cdot \frac{5y^3}{4x^3}$

3. $\frac{8y-4}{10y-5} \cdot \frac{5y-15}{3y-9}$

4. $\frac{2x+12}{3x-9} \cdot \frac{2x-6}{3x+8}$

5. $\frac{7x}{4y^3} \div \frac{21x^3}{8y}$

6. $\frac{3x^3}{5y^2} \div \frac{6x^5}{5y^3}$

7. $\frac{6x+6y}{x-y} \div \frac{18}{5x-5y}$

8. $\frac{3y-12}{2y+4} \div \frac{6y-24}{4y+8}$

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

10. $\frac{y^2-5y+6}{y^3} \div \frac{y^2+3y-10}{4y^2}$

11. $\frac{x^2-4}{x^2-1} \cdot \frac{x+1}{x^2+2x}$

12. $\frac{x^2-5x+6}{x^2-4} \cdot \frac{x^2+3x+2}{x^2-2x-3}$

13. $\frac{a+3}{a^2+a-12} \div \frac{a^2-9}{a^2+7a+12}$

14. $\frac{b^2-25}{(b+5)^2} \div \frac{2b+10}{4b+20}$

15. $\frac{6x^3-6x^2}{x^4+5x^3} \div \frac{3x^2-15x+12}{2x^2+2x-40}$

16. $\frac{2x^2-6x}{x^2+18x+81} \cdot \frac{9x+81}{x^2-9}$

17. $\frac{x^2-x-2}{2x^2-5x+2} \div \frac{x^2-x-12}{2x^2+5x-3}$

18. $\frac{2x^2+5x+2}{4x^2-1} \cdot \frac{2x^2+x-1}{x^2+x-2}$