Name_____ Class_____ Date_____

9-2 Practice

Rational Expressions

Simplify each rational expression. State any restrictions on the variables.

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

2. $\frac{2y}{y^2+6y}$

3. $\frac{20+40x}{20x}$

4. $\frac{7x-28}{x^2-16}$

5. $\frac{3y^2-3}{y^2-1}$

6. $\frac{3x^2-12}{x^2-x-6}$

7. $\frac{x^2+3x-18}{x^2-36}$

8. $\frac{x^2+13x+40}{x^2-2x-35}$

Multiply. State any restrictions on the variables.

9. $\frac{5a}{5a+5}\cdot\frac{10a+10}{a}$

10. $\frac{2x+4}{10x}\cdot\frac{15x^2}{x+2}$

11. $\frac{x^2-5x}{x^2+3x}\cdot\frac{x+3}{x-5}$

12. $\frac{x^2-6x}{x^2+36}\cdot\frac{x+6}{x^2}$

13. $\frac{5y-20}{3y+15}\cdot\frac{7y+35}{10y+40}$

14. $\frac{x-2}{(x+2)^2}\cdot\frac{x+2}{2x-4}$

15. $\frac{3x^3}{x^2-25}\cdot\frac{x^2+6x+5}{x^2}$

16. $\frac{y^2-2y}{y^2+7y-18}\cdot\frac{y^2-81}{y^2-11y+18}$

Divide. State any restrictions on the variables.

17. $\frac{7x^4}{24y^5}\div\frac{21x}{12y^4}$

18. $\frac{6x+6}{7}\div\frac{4x+4}{x-2}$

19. $\frac{5y}{2x^2}\div\frac{5y^2}{8x^2}$

20. $\frac{3y+3}{6y+12}\div\frac{18}{5y+5}$

21. $\frac{y^2-49}{(y-7)^2}\div\frac{5y+35}{y^2-7y}$

22. $\frac{x^2+10x+16}{x^2-6x-16}\div\frac{x+8}{x^2-64}$

23. $\frac{y^2-5y+4}{y^2-1}\div\frac{y^2-9}{y^2+5y+4}$

24. $\frac{x^2-4}{x^2+6x+9}\div\frac{x^2+4x+4}{x^2-9}$