

# Ch. 11 Review WS 2

Name EVENS

Simplify each algebraic fraction. State the excluded values of the variables.

$$\frac{3x^2y}{12xy^2z}$$

$$\frac{x}{4y^2z}$$

$x \neq 0$   
 $y \neq 0$   
 $z \neq 0$

$$2. \frac{x+y}{x^2+3xy+2y^2} \cdot \frac{1}{x+2y}$$

$$3. \frac{x^2+10x+21}{x^3+x^2-42x} \cdot \frac{x+3}{x(x-6)}$$

$x \neq 0, -7$

Find each product and simplify.

$$4. \frac{7}{9} \cdot \frac{a^2}{b} = \frac{7a^2}{9b}$$

$$5. \frac{5x^2y}{8ab} \cdot \frac{12a^2b}{25x} = \frac{3axy}{10}$$

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

$$\frac{(x+4)(x+4)}{(x+2)(x+2)}$$

Find each quotient.

$$7. \frac{7a^2b}{x^2+x-30} \div \frac{3a}{x^2+15x+54} = \frac{7ab(x+9)}{3(x-5)}$$

$$8. \frac{m^2+4m-21}{m^2+8m+15} \div \frac{m^2-9}{m^2+12m+35} = \frac{(m+7)(m+7)}{(m+3)(m+3)}$$

$$9. (x+3)(x^3+7x^2+10x-6) \div (x^2+4x-2)$$

$$10. (2a-5)(6a^3-19a^2+2a+15) \div (m+3)(m+3)$$

Find each sum or difference and simplify.

$$11. \frac{x}{x^2-1} + \frac{1}{x^2-1} = \frac{x+1}{(x-1)(x+1)} = \frac{1}{x-1}$$

$$12. \frac{7}{x^2} + \frac{a}{x^2} = \frac{7+a}{x^2}$$

$$13. \frac{2x}{x-3} - \frac{6}{x-3} = 2$$

$$14. \frac{2}{x-y} + \frac{x}{y-x}$$

$$15. \frac{5a}{3x} - \frac{2}{4x^2y}$$

$$\frac{5a}{3xy}$$

$$16. \frac{x}{x+3} - \frac{5}{x-2} = \frac{x^2-7x-15}{(x+3)(x-2)}$$

$$17. \frac{2x+3}{x^2-4} + \frac{6}{x+2} = \frac{8x-9}{(x+2)(x-2)}$$

$$3a^2 - 2a - 4 - \frac{5}{2a-5}$$

Simplify.

$$18. \frac{x^2}{3x} \cdot \frac{3x}{9y^2} = \frac{3x}{y}$$

$$19. \frac{x-3}{x+5} \cdot \frac{x+5}{x} = \frac{x-3}{x}$$

$$20. \frac{a^2-13a+40}{a^2-4a-32} \cdot \frac{a-5}{a+7} = \frac{a+7}{a+4}$$

$$21. \frac{x-x+2}{x+42} = \frac{2}{x+13}$$

Solve each equation.

$$22. \frac{4x}{3} + \frac{7}{2} = \frac{7x}{12} \Rightarrow x = -\frac{14}{3}$$

$$23. \frac{3}{x} + \frac{1}{x-5} = \frac{1}{2x} \Rightarrow x = 7$$

$$24. \frac{1}{h+1} + \frac{2}{3} = \frac{2h+5}{h-1} \Rightarrow h = -2 \text{ or } -\frac{5}{2}$$

$$25. \frac{3x+2}{x^2+7x+6} = \frac{1}{x+6} + \frac{4}{x+1} \Rightarrow x = \frac{73}{-2}$$

$$26. \frac{3m-2}{2m^2-5m-3} - \frac{2}{2m+1} = \frac{4}{m-3} \Rightarrow m = 0$$

Perform the indicated operations and simplify.

$$27. \frac{3x}{x+3} + \frac{5x}{x+3} = \frac{8x}{x+3}$$

$$28. \frac{2x}{x-7} - \frac{14}{x-7} = 2$$

$$29. \frac{2x}{x+7} + \frac{4}{x+4} = \frac{2x^2+12x+28}{(x+7)(x+4)}$$

$$30. \frac{2a+1}{2a-3} + \frac{a-3}{3a+2} = \frac{8a^2-2a+11}{(2a-3)(3a+2)}$$

$$31. \frac{x+5}{x+2} + 6 = \frac{7x+17}{x+2} \Rightarrow \frac{x^2-2x-42}{x-8}$$

$$32. \frac{x-2}{x-8} + x + 5$$

$$33. \frac{3x+2}{4x+1} + \frac{7}{x} = \frac{3x^2+30x+7}{x(4x+1)}$$

$$34. \frac{3x-8}{x+4} + \frac{9}{x+1} = \frac{3x^2+4x+28}{(x+4)(x+1)}$$

$$35. \frac{x^2+4x-32}{x+5} \div \frac{x-3}{x^2-7x+12} = \frac{x+8}{x+5}$$

$$36. \frac{3x^2+2x-8}{x^2-4} \div \frac{6x^2+13x-28}{2x^2-3x-35} = \frac{x-5}{x-2}$$

$$37. \frac{4x^2+11x+6}{x^2-x-6} \div \frac{x^2+8x+16}{x^2+x-12} = \frac{4x+3}{x+4}$$

$$38. \frac{3x^2+5x-28}{x^2-3x-28} \cdot \frac{x^2-8x+7}{3x-7} = x-1$$