

Chapter 10 Review

Simplify. (10.1)

1. $\frac{6x^5y^2}{22x^3y^7}$

2. $\frac{-30x^8y^5z}{20x^2y^5z}$

3. $\frac{5y+5}{45y}$

4. $\frac{-22y-11}{11y}$

5. $\frac{8a^6+4a^2}{16a^7+12a^4}$

6. $\frac{18x^3+54x}{9x-27}$

7. $\frac{7a^5-7a^3}{a^4+a^3}$

8. $\frac{15-6x}{x-3}$

9. $\frac{(a+b)^4}{(a+b)}$

10. $\frac{9b^3+18b^2-27b}{b^2+2b-3}$

11. $\frac{11y^2-44}{11(y+2)}$

12. $\frac{m-35}{35-m}$

Multiply. (10.2)

13. $\frac{25}{x^5} \cdot \frac{8x^4}{15}$

14. $\frac{-6}{2x} \cdot \frac{-x^5}{x+7}$

15. $\frac{-12a}{9(a-1)} \cdot \frac{3a-3}{a^8}$

16. $\frac{7a}{9} \cdot \frac{a+5}{a-2}$

17. $\frac{x-7}{x-5} \cdot \frac{x+7}{x+5}$

18. $\frac{5a+3}{8} \cdot \frac{10}{a-4}$

19. $\frac{b-2}{b^2+4} \cdot \frac{b+5}{b^2-4}$

20. $\frac{y+5}{8+y} \cdot \frac{y-5}{x-4}$

21. $\frac{2a-1}{4a+5} \cdot \frac{a}{2a-1}$

22. $\frac{-6}{-7} \cdot \frac{4-m}{7-m}$

23. $\frac{4(x-8)}{12x} \cdot \frac{15x^2}{6(x-8)}$

24. $\frac{(a-5)^4}{a+5} \cdot \frac{(a+5)}{(a-5)^2}$

Divide. (10.3)

25. $\frac{8a^5}{14} \div \frac{-4a}{7}$

26. $\frac{9}{x^5} \div \frac{18}{x^4}$

27. $\frac{16x^9}{3} \div 8x^7$

28. $\frac{-3+9y}{14} \div \frac{y-14}{2}$

29. $\frac{-24+8m}{20} \div \frac{-16+4m}{35}$

30. $\frac{x-3}{x+5} \div \frac{4x-12}{x+3}$

31. $\frac{y-4}{y} \div \frac{y+2}{y-2}$

32. $\frac{4x-8}{x+2} \div \frac{x-2}{x^2-4}$

33. $\frac{x-3}{26x} \div \frac{x^2-9}{13x^2}$

34. $\frac{17}{4x-12} \div \frac{34x+51}{8x-16}$

35. $\frac{x^2-4x+4}{x-2} \div (x-2)$

36. $\frac{7-y}{y^2-7y-8} \div (y-7)$

Divide. (10.4)

37. $\frac{27x^4-3x^3+x^2-9x+12}{3}$

38. $\frac{y-7y^3+y^4}{y}$

39. $\frac{30x^4-5x^3+x^2+5}{5}$

40. $\frac{45a^5-9a^3+a^2}{a}$

41. $\frac{24x^3+36x^2+8x}{4x}$

42. $\frac{48y^3+30y^2-18y}{6y}$

43. $\frac{35a^6-28a^4+7a^2}{-7a}$

44. $\frac{4m^5-28m^4+8m^2}{-2m^2}$

45. $\frac{t^2+6t-20}{t-2}$

46. $\frac{3x^2+19x-72}{3x-8}$

47. $\frac{24y^2-46y-35}{2y-5}$

48. $\frac{12x^2+13x-30}{3x+7}$

Add or subtract. (10.5)

1. $\frac{x^2 - 8x + 9}{x + 3} + \frac{x^2 + 4x + 9}{x + 3} - \frac{x^2 - 9x + 12}{x + 3}$

2. $\frac{x + 8}{5x + 4} - \frac{x^2 + 5x - 6}{5x + 4}$

3. $\frac{x - 5}{8x + 5} - \frac{9x}{8x + 5}$

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

5. $\frac{x + 2}{4x + 21} - \frac{6x + 13}{4x + 21} - \frac{3x + 8}{4x + 21}$

6. $\frac{5x^2 - x + 8}{x - 6} - \frac{x^2 - x + 5}{x - 6} - \frac{5x^2 + 14x + 33}{x - 6}$

7. $\frac{x^2 + 5x + 14}{x^2 + 2x - 15} + \frac{x^2 + 8x - 24}{x^2 + 2x - 15} + \frac{x^2 - 2x - 10}{x^2 + 2x - 15}$

8. $\frac{3x + 1}{x - 9} + \frac{-3x + 1}{x - 9}$

Add or subtract. (10.6)

9. $\frac{x}{x^2 - 4} + \frac{8x}{x + 2}$

10. $\frac{17a}{a^2 - 64} + \frac{4a}{a - 8}$

11. $\frac{-24}{x - 3} - \frac{18}{3x - 9}$

12. $\frac{-9}{2b + 14} + \frac{25p}{b + 7}$

13. $\frac{8r}{(r + 5)^2} - \frac{12r}{r + 5}$

14. $\frac{-2}{(w - 4)^2} - \frac{16}{w - 4}$

15. $\frac{8x}{5x - 25} + \frac{9x}{7x - 35}$

16. $\frac{28y}{3y + 6} - \frac{10y}{y + 2}$

17. $\frac{15}{x^2 + 9x + 8} + \frac{4}{x^2 + 7x - 8}$

18. $\frac{3}{x^2 - 5x + 6} - \frac{-8}{x^2 - x - 30}$

19. $\frac{-8 + 7x}{3x^2} + \frac{-5x + 9}{6x}$

20. $\frac{-y^2 - 2y + 8}{15y} - \frac{y^2 + 5}{5y}$

Solve. (10.7)

21. $\frac{8}{5} + \frac{5}{3} = \frac{y}{15}$

22. $\frac{7}{8} + \frac{5y}{4} = \frac{y}{2}$

23. $\frac{5}{7x} + \frac{9}{x} = 1$

24. $\frac{2a}{6} + \frac{18a}{18} = \frac{a}{9}$

25. $\frac{3}{6a} + \frac{7}{4} = \frac{5}{8}$

26. $\frac{7}{8y} + \frac{1}{3y} = \frac{1}{12}$

27. $\frac{12}{y - 2} + \frac{5}{y + 2} = 1$

28. $\frac{x + 4}{7} + \frac{x + 9}{3} = 1$

29. $\frac{y - 8}{12} + \frac{-y - 4}{5} = \frac{1}{6}$

30. $\frac{y + 5}{12} - \frac{y - 3}{18} = \frac{7}{9}$

31. $\frac{20}{y^2 - 4} - \frac{11}{y - 2} = 5$

32. $z - \frac{22}{z} = \frac{3}{z}$

Simplify. (10.8)

33. $\frac{\frac{9}{5} + \frac{6}{5}}{\frac{2}{15}}$

34. $\frac{7 + \frac{32}{5}}{\frac{1}{4}}$

35. $\frac{\frac{7}{12} + \frac{5}{8}}{\frac{14}{15}}$

36. $\frac{\frac{a}{6} + \frac{20}{9}}{\frac{6a}{10}}$

37. $\frac{\frac{5}{4} + \frac{9}{x - 3}}{\frac{12}{x - 3} + 24}$

38. $\frac{\frac{2}{ab}}{\frac{2}{a} + \frac{5}{b}}$

39. $\frac{\frac{24}{c + d}}{\frac{8}{c^2 - d^2}}$

40. $\frac{\frac{x + y}{y} - \frac{x}{x}}{\frac{1}{y} - \frac{1}{x}}$

41. $\frac{\frac{8}{c} + \frac{2}{5c}}{\frac{1}{c} + \frac{7}{c}}$

42. $\frac{\frac{a}{a - b}}{\frac{a^2}{a^2 - b^2}}$

43. $\frac{\frac{x}{y} + \frac{y}{w}}{\frac{w - z}{z} - \frac{z}{v}}$

44. $\frac{20 + \frac{8}{y + 9}}{\frac{6}{y + 9} - 5}$