

Chapter 5 answers

5.1

- all real numbers except $x \neq 0$
- all real numbers except $x \neq -\frac{4}{3}$
- all real numbers except $x \neq 1$ and $x \neq -\frac{3}{2}$
- all real numbers except $x \neq 2$ and $x \neq 3$
- $\frac{3}{8}$
- $\frac{x+1}{x-1}$
- $\frac{1}{x+2}$
- $\frac{y^2}{x}$
- $\frac{1}{2b}$
- $\frac{3y}{5x}$
- $\frac{x-1}{x+9}$
- $\frac{x-1}{x+8}$
- $-\frac{1}{4+x}$
- $-\frac{10}{x}$
- $\frac{x+1}{2x+3}$
- $\frac{x}{x+9}$
- $\frac{x+8}{x+7}$
- $-\frac{1}{x+9}$
- $\frac{x}{2}$
- $\frac{x-1}{2(x+1)}$
- $-\frac{1}{2(x+y)}$
- $\frac{2a-b}{3a(3a+2b)}$

5.2

- $3x^2y$
- $\frac{5ab^2}{6}$
- $\frac{x+3}{2x^2(x+6)}$
- $-\frac{3a}{2}$
- $2(x+4)$
- $x-7$
- $\frac{1}{x+7}$
- $\frac{1}{x-5y}$
- $\frac{27b(x+3)}{2a(x+4)}$
- $\frac{x(x+4)}{y(x-5)}$
- $\frac{1}{(y-1)^2}$
- 1
- $\frac{2x^2}{3y^2}$
- $\frac{2n^4}{m^2}$
- $\frac{a(a-b)}{4b^3}$
- $\frac{x+2}{6}$
- $-\frac{2(x+5)^2}{(x-4)^2}$
- $\frac{(x-6)(x-1)}{(x+4)(x-3)}$
- $\frac{1}{x-4}$
- $\frac{x+6y}{x+7y}$
- 1
- $\frac{3}{4}$
- $\frac{3(x-2)}{x-8}$
- $\frac{3}{4y(x+4)}$
- $\frac{x(x+4)}{6(x-8)}$
- $3x$
- $\frac{y^4}{4}$

5.3

- $\frac{11}{x}$
- $-\frac{1}{x^2y}$
- $\frac{x+5}{x-2}$
- $\frac{1}{x+1}$
- 2
- $\frac{1}{b+8}$
- 1
- $\frac{2(x-8)}{x-4}$
- $\frac{x-10}{x-18}$
- $\frac{x}{y+9}$
- $\frac{1}{x+3y}$
- $\frac{x-10y}{6x-11y}$
- $\frac{(x-2)(x-4)}{(x-7)(x+2)}$
- $\frac{2(x-9)(x+6)}{(x+5)(x-4)}$
- 0
- 10x
- $9x^2y^2$
- $12(x+5)(x+2)$
- $(a+3)(a-3)(a+7)$
- $(x+4)(x-2)$
- $(x+3)^2(x+5)$
- $(x+4)(x+8)(x-4)^2$
- $(a+7b)^2(a+8b)^2$
- $2x(x-3y)(x-4y)$
- $2x^2y(3xy-2)(xy-1)^2$

5.4

- 3
- $y+11$
- 9
- $\frac{x-7}{x+6}$
- $\frac{x-4}{x}$
- $\frac{8x+7}{(x-6)(x+5)}$
- $\frac{5}{x-3}$
- $\frac{-x+7}{(x+4)(x-2)}$
- $\frac{2(x^2+2x-32)}{(x-8)(x-2)}$
- $\frac{(3x-2)(2x-5)}{(x-4)(x+2)}$
- $\frac{3x^2-14x-10}{(x+2)(x-3)}$
- $\frac{x^2-7x-12}{(x-3)^2(x+3)}$
- $\frac{x-1}{x(x+2)}$
- $\frac{x+12}{(x+9)(x+8)}$
- $\frac{12y}{(x-5y)(x+8y)}$
- $\frac{2x}{(x-3)(x+5)}$
- $\frac{17}{(x-8)(x+9)}$
- $\frac{2(x+8)}{(x+2)(x+5)}$
- $\frac{2(x-3)}{x+3}$
- $\frac{x-3}{x+2}$
- $\frac{x^2-2x+5}{(x+1)(x-1)}$
- $\frac{-2(x^2+18x-1)}{(x-3)(x+3)}$
- $\frac{(x+1)^2}{(x-2)(x-1)}$
- $\frac{x^2-4xy+3y^2+2x-8y-1}{(x-3y)(x-4y)}$
- $\frac{x^2-5x-8}{(2x-1)(3x+2)(x+2)}$

5.5

- $\frac{17}{2}$
- $\frac{180}{133}$
- $\frac{6}{z}$
- $\frac{-2x-3}{3x+13}$
- $\frac{2(5x-4)}{6x-1}$
- $\frac{4x}{x-2}$
- $-\frac{6(x-3)}{x+3}$
- $\frac{12}{x+9}$
- $\frac{18}{x+6}$
- $\frac{16}{x+4}$
- $\frac{7x-20}{3x-2}$
- $-\frac{x-2}{3}$
- $\frac{x^2+5x+15}{-x^2+10}$
- $\frac{(x-8)(x-1)(x+1)}{x^2(x-2)(x+2)}$
- $\frac{x-6}{x-8}$
- $\frac{x-7}{x-2}$
- $\frac{y-2}{y+1}$
- $\frac{-2}{x^2-3x-7}$
- $\frac{-x+5}{(x+1)^2}$
- $-\frac{1}{x(x+h)}$
- $-\frac{1}{(x+2)(x+h+2)}$
- $\frac{-2x-h+2}{(x-1)^2(x+h-1)^2}$

5.6

1. {12} 3. {18} 5. $\left\{-\frac{13}{12}\right\}$ 7. {6} 9. {2, 7} 11. $\left\{-\frac{17}{10}\right\}$
 13. {5} 15. {-2, 4} 17. $\left\{\frac{7}{3}\right\}$ 19. {4} 21. $\left\{\frac{5}{9}\right\}$ 23. {3}
 25. {9} 27. {1} 29. No Solution 31. {-3, 6} 33. {-2}
 35. {-1} 37. {2} 39. {4} 41. {-4, 15} 43. {2} 45. $\left\{-\frac{7}{2}, 15\right\}$
 47. {-3, 20} 49. {-1, 15}

5.7

1. $w = \frac{A}{l}$ 3. $h = \frac{V}{2\pi r^2}$ 5. $h = \frac{A-2\pi r^2}{2\pi r}$ 7. $m = \frac{y-y_1}{x-x_1}$ 9. $c = \frac{L-a}{at}$ 11. $c = \frac{N-a-2b}{bt}$
 13. $d = \frac{s-a}{n-1}$ 15. $C = \frac{N}{1-r}$ 17. $a = \frac{3L}{ct+1}$ 19. $x = y$ 21. $R = \frac{E-LK}{L}$ 23. $a = \frac{rb}{b+r}$
 25. $x = \frac{y}{1-yz}$ 27. $B = \frac{C}{AC-1}$ 29. $x = \frac{AB-4A}{2B}$ 31. $C = \frac{2AB-A}{2B}$ 33. $x = y + 2z$
 35. $a = \frac{bc-3b-3c}{6c}$

5.8

1. 6 min 3. 6 hrs 5. 36 min 7. 30 hrs 9. $5\frac{5}{6}$ hrs 11. 8 min
 13. Don: 6 hrs, MaryAnn: 12 hrs 15. 12 hrs 17. Scott: 8 hrs, Patty: 24 hrs
 19. 11 hrs 21. 280 seconds, or 4 minutes 40 seconds 23. 18 hrs 25. 6 mph
 27. Tim: 50 mph, Eric: 80 mph 29. 80 mph 31. Jeff: 7 mph, Jon: 6 mph
 33. 20 kmph 35. 50 mph 37. 16.7 mph 39. 5 mph 41. 500 mph 43. 20 mph
 45. 2 mph 47. 60 mph 49. 6 mph