

COLLEGE ALGEBRA ANSWERS
SEMESTER 2

Sec. R.3 p. 32

32. $\frac{1}{16}$

Sec. R.6 pp. 65-67

a. $\frac{4x^2 - 15x - 21}{x(x+3)(x-2)}$

b. $\frac{-5x^2 - 15}{(x+2)(x-5)^2}$ or $\frac{-5(x^2 + 3)}{(x+2)(x-5)^2}$

Sec. 1.6 p. 137

16. $x = -4, x = 0, x = 2 \pm 2i\sqrt{3}$

28. $x = \pm\sqrt{3}, x = \pm 2, x = \pm 2i$

34. $m = 4$

44. $n = -9, n = 2$

46. $z = \frac{xy}{y-x}$

66. $x = 1, x = 4$

90. 3 hr. to Chicago; 2 hr. back to Cincinnati

94. $P \approx 78.7$ units

Sec. 2.5 pp. 217-223

8. not even

16. odd

18. even

24. even

26. $(-\infty, -1) \cup (1, 3)$

44. a) $(-\infty, 5]; (-\infty, 5]$

b) $x = -5, -3, 1$

c) pos: $[-5, -3] \cup [1, 5]$

neg: $(-\infty, 5] \cup [-3, 1]$

d) inc. $(-\infty, -4) \cup (-1, 2) \cup (4, 5)$

dec. $(-4, -1) \cup (2, 4)$

e) rel. max. $(-4, 3)$ (2, 4)

rel. min. $(-1, -4)$ (4, 1)

endpoint max at (5, 5)

a. odd

b. even

Sec. 4.2 p. 357

a1. $x^2 - 4x + 1 = 0$

a2. $x^2 - 5x - 1$

7. $2x^2 - x + 7 - \frac{4}{x+3}$

9. $x^2 - 3x - 4$

17. $2x^2 + 3x + 1 - \frac{13}{x-4}$

24. $2x^2 + 6x + 25 - \frac{6}{x-3}$

Sec. 4.3 pp. 371-373

b. $-1, 1, \frac{-3 \pm i\sqrt{11}}{2}$

Sec. 4.4 pp. 388-390

6. not a polyn; not continuous

8. polyn; degree 6

10. not a polyn; not continuous

26. a) odd b) -3 odd, -1 even, 1 odd, 2 odd

78. a) $f(x) = 55x^3 - 364x^2 + 750x$

b) $t \approx 1.64$ sec, 493.6 ft/sec

c) $t \approx 2.77$ sec, 453.5 ft/sec

d) $t \approx 4.48$ sec

Sec. 4.5 pp. 402-403

11. Vertical: $x = -2, x = 3$

Horizontal: $y = 0$

13. Vertical: $x = 3$

Horizontal: $y = 1$

15. Vertical: $x = -2, x = 2$

Horizontal: $y = 0$

17. Vertical: none

Horizontal: $y = 0$

21. Vertical: $x = -1, x = 1$

Horizontal: $y = 3$

53. Vertical: $x = 1$

Slant: $y = x + 1$

59. Vertical: none

Nonlinear: $y = -x^2 + 14$

See book answers for graphs:

51. Vertical: $x = 0$

Slant: $y = x$

x -int: $(-2, 0), (2, 0)$

y -int: none

55. Vertical: $x = -3$

Slant: $y = x + 1$

x -int: $(-2, 0)$

y -int: $\left(0, \frac{4}{3}\right)$

57. Vertical: none

Nonlinear: $y = x^2 - 1$

x -int: none

y -int: $(0, 4)$

Sec. 5.2 pp. 447-450

24. c

26. f

28. d

46. 2

60. 6

62. $1/3$

74. a) 2 months b) 12.8 cm

76. a) \$864 thousand b) 5 years

a. $5/4$

b. $-9/5$

Sec. 5.3 pp. 460-463

6. $3^2 = 9$

40. 6

42. 2

48. $-1/2$

50. -2

a) 11

b) 216

c) $e^4 \approx 54.6$

d) $2/3$

e) 6

f-i) See graphs at right.

Sec. 5.5 pp. 480-482

16. 2

24. No solution

a) 10

b) 2

c) 8

d) 5

e) $1/4$

a) $x = \frac{\ln(43.8) + 1}{4} \approx 1.59$

b) $\ln 6 \approx 1.79$

c) $\frac{\ln\left(\frac{7}{3}\right)}{2} \approx 0.42$

Sec. 6.1 pp. 517-520

34. $(5, 2)$

36. $\left(\frac{1}{2}, 2\right)$

50. $\left(1, \frac{7}{2}\right)$

72. 40 oz. of 5%, 10 oz. of pure

76. a) 1.5 mph b) 19 mph

Sec. 6.4 pp. 552-555

60. a) salami: $4b + 2l \leq 240$

ham: $3b + 4l \leq 300$

b) $b \geq 0$ and $l \geq 0$

c)

IA-36 #60 graph

p. 559

#12. Maximum of $P = 400$ at $(8, 0)$

Sec. 7.1 pp. 573-574

28. $(-6, -10)$

30. $(10, 12)$

32. $(2, 1, -3)$

38. $(0, 3, 2)$

40. $(-9, 13, 12)$

54. Mavericks 568, Heat 554

Sec. 7.2 pp. 585-588

$$24. \begin{bmatrix} -1 & 2 & 0 \\ 0 & 1 & -2 \\ -4 & -3 & 6 \end{bmatrix}$$

32. Not possible

Sec. 7.3 pp. 600-604

32. $(-3, 4)$

38. $(5, 10, -5)$

42. $\left(0.5, 0, \frac{2}{3}, -1\right)$

84. Willie Mays: \$7187.50;
Mickey Mantle: \$6320.00

Sec. 7.4 p. 616

32. $\frac{A}{x} + \frac{Bx+C}{x^2+3} + \frac{Dx+E}{(x^2+3)^2}$

40. $\frac{7}{x} - \frac{9}{x-2} + \frac{3}{(x-2)^2}$

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

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

50. $x+1 - \frac{5}{x} + \frac{3}{x-2} - \frac{2}{x+2}$