

Answers for 8.5

For use with pages 586–588

8.5 Skill Practice

1. complex fraction
2. *Sample answer:* Factor the denominator, find the least common denominator, multiply each fraction by the missing part(s) of the least common denominator, add the numerators and place over the least common denominator.
3. $\frac{5}{x}$
4. $\frac{x-4}{16x^2}$
5. $\frac{9-2x}{x+1}$
6. $\frac{3x(x+2)}{x-8}$
7. 5
8. $2x+1$
9. $3x(x-2)$
10. $4x^2(x+3)$
11. $2x(x-5)$
12. $24x^2(x-2)$
13. $x(x-5)(x+5)$
14. $(x-2)(3x+4)(3x-4)$
15. D
16. $\frac{107}{30x}$
17. $\frac{32-15x}{12x^2}$
18. $\frac{x^2-20x+16}{5x(x-4)}$
19. $\frac{3(x+12)}{(x+8)(x-3)}$
20. $\frac{2(x+7)}{(x+6)(x+4)}$
21. $\frac{2x^2+3x+9}{(x+1)(x-3)}$

22. $\frac{-2(7x+13)}{(x+2)(x-2)}$
23. $\frac{-3(x+16)}{(x-4)^2}$
24. $\frac{-x+1}{(x+7)(x-2)}$
25. You must have a common denominator before you can add values in the numerator;
$$\frac{x(x-5)+4(x+2)}{(x+2)(x-5)} = \frac{x^2-x+8}{(x+2)(x-5)}$$
26. C
27. $\frac{(2x+3)(x-1)}{(x-3)(x+3)^2}$
28. $\frac{-2(x+7)}{(x-4)(x+2)(x-8)}$
29. $\frac{8x^3-9x^2-28x+8}{x(x-4)(3x-1)}$
30. $\frac{-x^3-3x^3-x-51}{(x-5)(x+5)(x+3)}$
31. $\frac{x(x-18)}{6(5x+2)}$
32. $\frac{5(15x-2)}{x(x+20)}$
33. $\frac{8x(x+1)}{(x-2)(5x+3)}$
34. $\frac{-3}{4x}$
35. $\frac{3x}{4(x-1)}$
36. $\frac{x-4}{12(x-1)(x-6)}$

Answers for 8.5 *continued*
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37. *Sample answer:*

$$\frac{x^2 - x - 6}{x^2 + 4x} \cdot \frac{x^2 + 3x - 18}{4}$$

$$\frac{x + 2}{x} \cdot \frac{x^2 + 10x + 24}{4}$$

38. $\frac{-(x^3 - x - 1)}{5(x + 1)}$

39. $\frac{(3 - 2x)(x + 1)}{x(2x + 1)}$

40. $\frac{(1 + 2x)(x^2 + 6x - 3)}{3x(2x - 1)(2x^2 + 2x + 1)}$

8.5 Problem Solving

41. $T = \frac{2da}{(a - j)(a + j)}$; about 10.2 h

42. $\frac{R_1 R_2}{R_2 + R_1}$; about 1474 ohms

43. a. $M = \frac{Pi}{1 - \left(\frac{1}{1 + i}\right)^{12t}}$

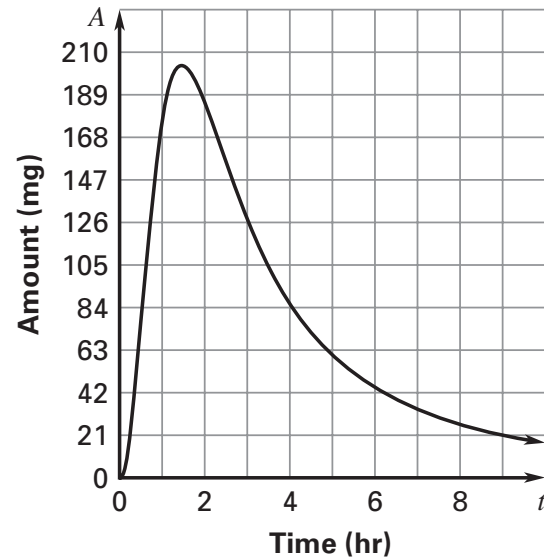
$$= \frac{Pi}{1 - \frac{1}{(1 + i)^{12t}}}$$

$$= \frac{Pi}{\frac{(1 + i)^{12t} - 1}{(1 + i)^{12t}}}$$

$$= \frac{Pi(1 + i)^{12t}}{(1 + i)^{12t} - 1}$$

b. \$990.41

44. a.

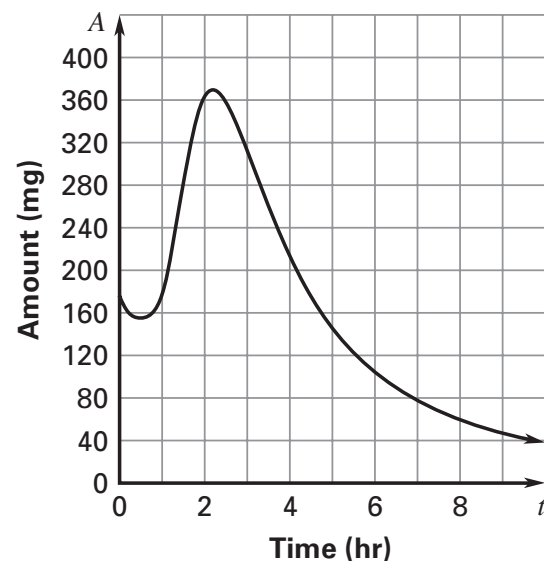


b.

$$A = \frac{391(t - 1)^2 + 0.112}{0.218(t - 1)^4 + 0.991(t - 1)^2 + 1}$$

c.

$$\frac{391t^2 + 0.112}{0.218t^4 + 0.99t^2 + 1} + \frac{391(t - 1)^2 + 0.112}{0.218(t - 1)^4 + 0.99(t - 1)^2 + 1}$$



d. about 1 h 13 min

Answers for 8.5 *continued*

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$$45. 1 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2}}}}},$$

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$$\frac{7}{5}, \frac{17}{12}, \frac{41}{29}, \frac{99}{70}, \frac{239}{169}, \sqrt{2}$$

8.5 Mixed Review

$$46. 33 \quad 47. -\frac{48}{7} \quad 48. -\frac{21}{22}$$

$$49. 3, -12 \quad 50. -\frac{7}{3}, 2$$

$$51. \frac{5}{2}, \frac{7}{2} \quad 52. \pm\sqrt{5}$$

$$53. -4, 8 \quad 54. 3, -13$$

