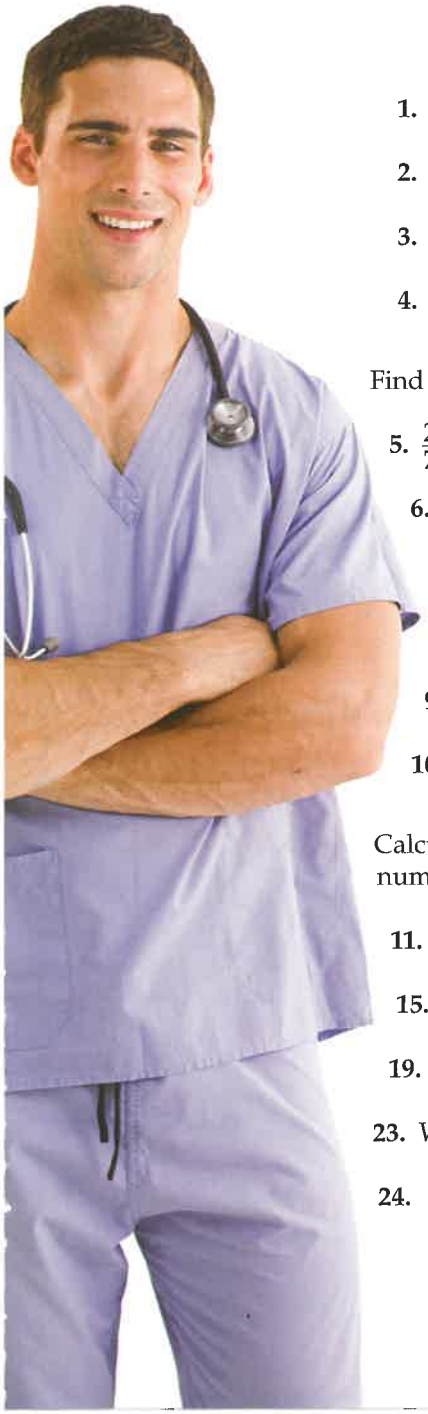
PRETEST

The following test covers basic mathematical concepts that you will need to understand and calculate dosages. This test will help you determine which concepts you need to review before continuing. You should already be able to perform basic operations—addition, subtraction, multiplication, and division—with whole numbers. The test covers fractions, decimals, percents, ratios, and proportions.

Take two hours to answer the following 72 questions. Then check your answers on page A-1. Review the questions you answered incorrectly to learn more about any basic math weaknesses. Then, as needed, review that content in Chapters 1 through 3. Each question (or group of questions) has an "LO" listed to indicate the learning outcome addressed by the question. If you need to review, these LO indicators will help you find the appropriate material in the text.



1. Convert $\frac{14}{3}$ to a mixed number. (LO 1.1)
2. Convert $3\frac{7}{8}$ to a fraction. (LO 1.1)
3. Convert $\frac{8}{5}$ to a mixed number. (LO 1.1)
4. Convert $2\frac{3}{4}$ to a fraction. (LO 1.1)

Find the missing numerator in the following equations. (LO 1.2, 3.4)

5. $\frac{2}{7} = \frac{x}{21}$
6. $1\frac{1}{8} = \frac{x}{16}$
7. Reduce $\frac{40}{100}$ to lowest terms. (LO 1.3)
8. Which fraction has the greater value, $\frac{3}{8}$ or $\frac{2}{6}$? (LO 1.5)
9. Reduce $\frac{48}{10}$ and rewrite the answer as a mixed number. (LO 1.1, 1.3)
10. Which number has a greater value, $3\frac{1}{3}$ or $3\frac{1}{4}$? (LO 1.5)

Calculate the following. Reduce fractions to lowest terms and rewrite any fractions as mixed numbers. (LO 1.1, 1.2, 1.3, 1.4, 1.6, 1.7, 1.8, 1.9)

11. $\frac{4}{5} + \frac{3}{8}$	12. $1\frac{1}{3} + \frac{5}{7}$	13. $\frac{7}{10} - \frac{1}{4}$	14. $8\frac{1}{4} - 2\frac{1}{3}$
15. $\frac{3}{5} \times \frac{1}{9}$	16. $3\frac{1}{5} \times 4\frac{3}{8}$	17. $\frac{2}{3} \div \frac{4}{5}$	18. $5\frac{1}{4} \div 2\frac{5}{8}$
19. $\frac{1}{4} + \frac{1}{3}$	20. $2\frac{3}{8} - \frac{3}{4}$	21. $7\frac{1}{2} \times \frac{3}{4}$	22. $3\frac{1}{3} \div 2$

23. Which number has the lesser value, 1.01 or 1.009? (LO 2.1)
24. Round 14.42 to the nearest whole number. (LO 2.2)

25. Round 6.05 to the nearest tenth. (LO 2.2)

26. Round 19.197 to the nearest hundredth. (LO 2.2)

27. Convert $3\frac{4}{5}$ to a decimal number. If necessary, round to the nearest tenth. (LO 2.3)

28. Convert 0.045 to a fraction or a mixed number. Reduce to lowest terms. (LO 2.4)

29. Which number has a greater value, 1.015 or 1.0105?

30. Convert $7\frac{1}{8}$ to a decimal number.

31. Round 3.08 to the nearest whole number.

32. Convert 3.6 to a fraction or mixed number. Reduce to lowest terms.

Calculate the following. (LO 2.5, 2.6, 2.7)

33. $7.289 + 8.011$

34. $0.012 + 0.9 + 4.2$

35. $19.1 - 4.4$

36. $100.03 - 0.6$

37. 0.07×3.2

38. $0.4 \div 0.02$

39. $6 - 1.025$

40. 1.4×1.5

41. $1.05 \div 2$

42. Convert 0.8 percent to a decimal number. (LO 3.1)

43. Convert 0.99 to a percent. (LO 3.1)

44. Convert 260 percent to a fraction or mixed number. (LO 3.1)

45. Convert $1\frac{1}{8}$ to a percent. (LO 2.3, 3.1)

46. Convert 7 : 12 to a fraction. (LO 3.2)

47. Convert $\frac{10}{50}$ to a ratio. Reduce to lowest terms. (LO 3.2)

48. Convert 1 : 12 to a decimal. Round to the nearest hundredth, if necessary. (LO 3.2)

49. Convert 0.4 to a ratio. Reduce to lowest terms. (LO 3.2)

50. Convert 3 : 8 to a percent. Round to the nearest percent, if necessary. (LO 3.1)

51. Convert 0.5 percent to a ratio. Reduce to lowest terms. (LO 3.2)

52. Convert 8:3 to a mixed number. (LO 3.2)

53. Convert 0.15 to a ratio. Reduce to lowest terms. (LO 3.2)

54. Convert 1.05 to a percent. (LO 3.1)

55. Convert 1.5% to a fraction. Reduce to lowest terms. (LO 3.1)

Find the missing value in the following proportions. (LO 3.4)

56. $8 : 16 = x : 8$

57. $\frac{5}{9} = \frac{x}{27}$

58. $8 : 12 = x : 9$

59. $\frac{2}{7} = \frac{x}{28}$

60. $\frac{x}{4} = \frac{8}{32}$

61. A healthcare professional is instructed to give a patient $1\frac{1}{2}$ teaspoons of cough syrup 4 times a day. How many teaspoons of cough syrup will be given each day? (LO 3.4)

62. A healthcare professional tries to keep the equivalent of 12 bottles of a medication on hand. The hospital's first floor has $1\frac{1}{2}$ bottles, the second floor has $1\frac{3}{4}$ bottles, the third floor has $3\frac{1}{4}$ bottles, and the supply closet has 3 bottles. Is there enough medication on hand? If not, how much should be ordered? (LO 1.6)

63. A bottle contains 75 milliliters (mL) of a liquid medication. Since the bottle was opened, one patient has received 3 doses of 2.5 mL. A second patient has received 4 doses of 2.2 mL. How much medication remains in the bottle? (LO 2.5, 2.6)

64. A tablet contains 0.125 milligram (mg) of medication. A patient receives 3 tablets a day for 5 days. How many milligrams of medication does the patient receive over the 5 days? (LO 2.6)

65. An IV bag contained 1000 mL of a liquid. The liquid was administered to a patient, and now there is 400 mL left in the bag after 3 hours. How much IV fluid did the patient receive each hour? (LO 3.4)

66. The patient is taking 0.5 mg of medication 4 times a day. How many milligrams would the patient receive after $1\frac{1}{2}$ days? (LO 2.6, 3.4)

67. The patient took 0.88 microgram (mcg) every morning and 1.2 mcg each evening for 4 days. What was the total amount of medication taken? (LO 2.5, 2.6)

68. Write a ratio that represents that 500 mL of solution contains 5 mg of drug. (LO 3.3)

69. Write a ratio that represents that every tablet in a bottle contains 25 mg of drug. (LO 3.3)

70. Write a ratio that represents that 3 mL of solution contains 125 mg of drug. (LO 3.4)

71. A patient takes 5 mL of a medication twice a day. How long will 120 mL last? (LO 3.4)

72. Write a ratio that represents 2 mg of drug in 1 mL of a liquid. (LO 3.2)