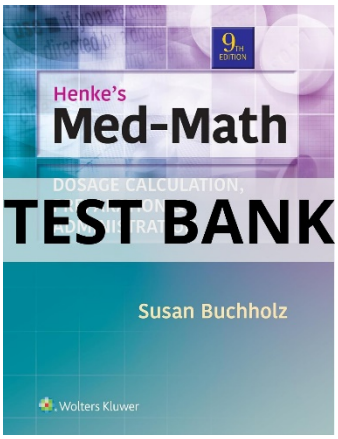
Chapter 1, Arithmetic Needed for Dosage



Format: Multiple Choice
Chapter: 1
Client Needs: Physiological Integrity: Basic Care and Comfort
Cognitive Level: Apply
Difficulty: Moderate
Page and Header: 2, Dividing Whole Numbers; 3, Fractions
Integrated Process: Teaching/Learning
Objective: 1, 2

1. A patient/client was instructed to drink 25 oz of water within 2 hours but was only able to drink 15 oz. What portion of the water remained?

A) 2/5
B) 3/5
C) 2/25
D) 25/25

Ans: A

Feedback: Subtract the quantity of water the client drank (15 oz) from the total available quantity (25 oz): 10 oz remain. To determine the portion of the water that remains, create a fraction by dividing 10 oz (remaining portion) by 25 oz (total portion). Therefore, 10 divided by 25 = 10/25. To reduce fractions, find the largest number that can be divided evenly into the numerator and the denominator (5). Ten divided by 5 (10/5) = 2; 25/5 = 5. The fraction 10/25 can be reduced to its lowest terms of 2/5.

Format: Multiple Choice
Chapter: 1
Client Needs: Physiological Integrity: Basic Care and Comfort
Cognitive Level: Apply
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Page and Header: 2, Dividing Whole Numbers; 3, Fractions
Integrated Process: Teaching/Learning
Objective: 1, 2

2. A patient/client was prescribed 240 mL of Ensure by mouth as a supplement but consumed only 100 mL. What portion of the Ensure remained?

A) 5/12

B) 7/12

C) 100/240

D) 240/240

Ans: B

Feedback: Subtract the quantity of Ensure the client consumed (100 mL) from the total available quantity (240 mL): 140 mL remain. To determine the portion of the Ensure that remains, create a fraction by dividing 140 mL (remaining portion) by 240 mL (total portion). Therefore, 140 divided by 240 = 7/12. To reduce fractions, find the largest number that can be divided evenly into the numerator and the denominator (20); 140 divided by 20 (140/20) = 7; 240/20 = 12. The fraction 140/240 can be reduced to its lowest terms of 7/12.

Format: Multiple Choice

Chapter: 1

Client Needs: Physiological Integrity: Basic Care and Comfort

Cognitive Level: Analyze

Difficulty: Difficult

Page and Header: 2, Multiplying Whole Numbers; 3, Fractions

Integrated Process: Communication and Documentation

Objective: 1, 2

3. A patient/client consumed $2\frac{1}{4}$ oz. of coffee, 2/3 oz. of ice cream, and $1\frac{1}{2}$ oz. of beef broth. What is the total number of ounces consumed that should be documented for the patient/client?

A) 3 3/4

B) 4 5/12

C) 4 2/3

D) 4 4/9

Ans: B

Feedback: Add the amount of ounces consumed. First, change any mixed number to a fraction by multiplying the whole number by the denominator and then adding that total to the numerator. For the coffee, $4 \times 2 = 8 + 1 = 9/4$; for

the beef broth, 2 × 1 = 2 + 1 = 3/2. Then add: 9/4 + 2/3 (ice cream) + 3/2. When fractions have different denominators, find the least common denominator (LCD). For 2, 3, and 4, the LCD = 12. Rewrite each fraction using the LCD; divide the LCD by the denominator of each fraction and then multiply that result by the numerator of the fraction. The new fractions to be added are 27/12 (coffee), 8/12 (ice cream), and 18/12 (beef broth). After conversion of the fractions, the numerators are added together and the fraction is reduced to the lowest terms.

Format: Multiple Choice
Chapter: 1
Client Needs: Physiological Integrity: Basic Care and Comfort
Cognitive Level: Analyze
Difficulty: Difficult
Page and Header: 2, Multiplying Whole Numbers; 3, Fractions
Integrated Process: Communication and Documentation
Objective: 1, 2

4. A coffee cup holds 180 mL. The patient/client drank 2⅓ cups of coffee. How many milliliters would the nurse document as consumed?

A) 360
B) 420
C) 510
D) 600

Ans: B

Feedback: The coffee cup holds 180 mL. The client drank 2⅓ cups. To estimate the total number of milliliters consumed, multiply 180 × 7/3 (2⅓). When a mixed number is present, change it to an improper fraction by multiplying the whole number by the denominator and then adding that total to the numerator: 2 × 3 = 6 + 1 = 7/3. Therefore, 180 mL × 7/3 = 420 mL (180 ÷ 3 = 60 × 7 = 420).

Format: Multiple Choice
Chapter: 1
Client Needs: Physiological Integrity: Physiological Adaptation
Cognitive Level: Apply
Difficulty: Moderate
Page and Header: 10, Decimals

Integrated Process: Nursing Process
Objective: 3, 5

5. A patient/client weighed 48.52 kg on admission and now weighs 50.4 kg. How many kilograms were gained since admission?

A) 0.78
B) 0.88
C) 1.88
D) 1.98

Ans: C

Feedback: To estimate the amount of kilograms gained, subtract weight on admission (48.52) from current weight (50.4 kg) = 1.88 kg (weight gained). To subtract decimals, decimals are stacked lined up. Starting at the far right of the stack, the numbers are subtracted. In the answer, make sure the decimal point lines up exactly with the points above it.

Format: Multiple Choice
Chapter: 1
Client Needs: Physiological Integrity: Physiological Adaptation
Cognitive Level: Apply
Difficulty: Moderate
Page and Header: 10, Decimals
Integrated Process: Teaching/Learning
Objective: 3, 5, 6

6. A patient/client's sodium intake for one meal was 0.004 g and 0.152 g. How many grams, to the nearest hundredths, of sodium were consumed?

A) 0.15
B) 0.156
C) 0.16
D) 0.166

Ans: C

Feedback: To add decimals, stack vertically, making sure that all of the decimal points exactly line up. Starting at the far right of the stack, add each vertical column of numbers. In the answer, make sure the decimal point lines up exactly with the points above it. To round off a decimal, the final number is dropped. Add 0.004 g + 0.152 g = 0.156 g (thousandths place) to determine the total number

of grams the client consumed. When the final number (6) is 5 or greater, drop that number and increase the adjacent number (5) by 1. When you want a number rounded off to the nearest hundredth, look at the number in the thousandth place and follow the rounding off rule. Therefore, 0.156 = 0.16 g.

Format: Multiple Choice
Chapter: 1
Client Needs: Physiological Integrity: Physiological Adaptation
Cognitive Level: Apply
Difficulty: Moderate
Page and Header: 10, Decimals; 15, Percents; 19, Fractions, Ratio, and Proportion.
Integrated Process: Teaching/Learning
Objective: 5, 7, 8

7. A patient/client reports drinking 30% of a 16-oz bottle of orange juice. How many ounces did the patient/client drink?

A) 0.18
B) 3.2
C) 4.8
D) 5.3

Ans: C

Feedback: Percent means "parts per hundred." Percent is a fraction, containing a variable numerator and a denominator that always equals 100. Therefore, 30% = 30/100 (fraction), 30:100 (ratio), and 0.3 (decimal). To determine the percent of the orange juice the client drank, multiply 30% × 16 oz. Using the decimal format (0.3 × 16), line up the numbers on the right. Do not align the decimal points. Starting at the right, multiply each digit in the top number by each digit in the bottom number, just as is done with whole numbers. Add the products. Place the decimal point in the answer by starting at the right and moving the point the same number of places that you totaled earlier. When blank spaces are present, fill each one with a zero. The answer is 4.8 oz (0.3 × 16).

Format: Multiple Choice
Chapter: 1
Client Needs: Physiological Integrity: Physiological Adaptation

Cognitive Level: Apply
Difficulty: Moderate
Page and Header: 10, Decimals; 15, Percents; 19, Fractions, Ratio, and Proportion.
Integrated Process: Communication and Documentation
Objective: 5, 7, 8

8. A patient/client reports drinking 45% of a 12-oz can of soda. How many ounces are documented?

A) 4.4
B) 5.7
C) 5.4
D) 4.7

Ans: C

Feedback: Percent means "parts per hundred." Percent is a fraction, containing a variable numerator and a denominator that always equals 100. Therefore, 45% = 45/100 (fraction), 45:100 (ratio), and 0.45 (decimal). To determine the percent of the soda that the client drank, multiply 45% × 12 oz. Using the decimal format (0.45 × 12), line up the numbers on the right. Do not align the decimal points. Starting at the right, multiply each digit in the top number by each digit in the bottom number, just as is done with whole numbers. Add the products. Place the decimal point in the answer by starting at the right and moving the point the same number of places that you totaled earlier. When blank spaces are present, fill each one with a zero. The answer is 5.4 oz (0.45 × 12).

Format: Multiple Choice
Chapter: 1
Client Needs: Physiological Integrity: Physiological Adaptation
Cognitive Level: Apply
Difficulty: Moderate
Page and Header: 3, Fractions
Integrated Process: Teaching/Learning
Objective: 1

9. A patient/client is on a 1200 mL fluid restriction for 24 hours. At breakfast and lunch, the patient/client consumed 3/5 of the fluid allowance. How many milliliters were consumed?

A) 280
B) 360
C) 540
D) 720
Ans: D
Feedback: To estimate 3/5 of 1200 mL, set up the fraction: 3/5 × 1200/1 = 3600/5 = 720 mL. Multiply the numerators across and then multiply the denominators across. Reduce the answer to its lowest terms.

Format: Multiple Choice
Chapter: 1
Client Needs: Physiological Integrity: Reduction of Risk Potential
Cognitive Level: Analyze
Difficulty: Difficult
Page and Header: 3, Fractions
Integrated Process: Communication and Documentation
Objective: 1
10. A patient/client is on a 1500 mL fluid restriction for 24 hours. At 3 PM, the client consumed 2/3 of the fluid allowance for 24 hours. What are the maximum milliliters of fluid remaining that the patient/client can consume during the evening shift?
A) 400
B) 450
C) 500
D) 550
Ans: C
Feedback: To estimate 2/3 of 1500 mL, multiply 2/3 × 1500. Set up the fraction: 2/3 × 1500/1 = 3000/3 = 1000 mL (amount of fluid consumed in milliliters). Multiply the fraction by multiplying the numerators across and then multiplying denominators across. Reduce the answer to its lowest terms. To determine the amount of fluid left to be consumed, subtract 1000 (amount of fluid consumed) from 1500 mL (total amount of fluid for 24 hours), which equals 500 mL (maximum fluid to be administered during evening shift).

Format: Multiple Choice

Chapter: 1
Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies
Cognitive Level: Apply
Difficulty: Moderate
Page and Header: 3, Fractions; 10, Decimals
Integrated Process: Teaching/Learning
Objective: 1, 5

11. A patient/client drank 0.375 mL of a medication that was available as 0.75 mL. List the amount of medication consumed as a fraction of the whole.

A) 1/5
B) 1/4
C) 1/3
D) 1/2

Ans: D

Feedback: The patient/client consumed 0.375 mL of 0.75 mL of a medication. To estimate the amount consumed, as a fraction of the whole, set up the problem as division: 0.375/0.750. Clear the decimal points in both the numerator and the denominator by moving each decimal point three places to the right. Therefore, 375/750 = 0.5 (or 1/2).

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Chapter: 1
Client Needs: Physiological Integrity: Physiological Adaptation
Cognitive Level: Apply
Difficulty: Moderate
Page and Header: 10, Decimals
Integrated Process: Teaching/Learning
Objective: 3

12. A laboratory report listed the following four results: bilirubin (0.2), creatinine (1.46), creatinine (0.09), and albumin (0.75). Identify the smallest amount.

A) 0.2
B) 1.46
C) 0.09
D) 0.75

Ans: C

Feedback: The correct order from smallest to largest is 0.09, 0.2, 0.75, and 1.46. Size is determined by the number of places that come after the decimal point. One place is "tenths," two places is "hundredths," and three places is "thousandths." Therefore, 0.09, read as nine hundredths, is smaller than two tenths, seventy-five hundredths, and one and forty-six hundredths.

Format: Multiple Choice
Chapter: 1
Client Needs: Physiological Integrity: Physiological Adaptation
Cognitive Level: Apply
Difficulty: Moderate
Page and Header: 10, Decimals
Integrated Process: Teaching/Learning
Objective: 3

13. The laboratory report included these four numbers: 0.355, 0.3, 0.03, and 0.035. Which decimal is the largest?

A) 0.3
B) 0.03
C) 0.035
D) 0.355

Ans: A

Feedback: The correct sequence from smallest to largest is 0.355, 0.035, 0.03, and 0.3. Size is determined by the number of places that come after the decimal point. One place is "tenths," two places is "hundredths," and three places is "thousandths." Therefore, three tenths is larger than three hundredths, thirty-five thousandths, and three hundred and fifty-five thousandths.

Format: Multiple Choice
Chapter: 1
Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies
Cognitive Level: Analyze
Difficulty: Difficult
Page and Header: 10, Decimals; 15, Percents
Integrated Process: Teaching/Learning

Objective: 4, 5, 6, 7

14. A patient/client's oral ibuprofen suspension dose contains 325 mg per teaspoon. A dose of 100 mg represents what percentage of this dosage?

A) 29.7

B) 30.8

C) 31.7

D) 32.8

Ans: B

Feedback: To estimate what percent 100 mg represents of 325 mg, divide 100/325. To change a fraction into a decimal, divide the numerator by the denominator. Add decimal points in the dividend and quotient as needed: 100/325 = 20/65 = 0.3076. Carry out to the thousandths place. To round off a decimal, the final number is dropped. When the final number is 5 or greater, drop the number and increase the adjacent number by 1. Therefore, 0.3076 = 0.308. Next, change a decimal to a percent by moving the decimal point two places to the right, then write the percent sign: 0.308 = 30.8%.

Format: Multiple Choice

Chapter: 1

Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies

Cognitive Level: Analyze

Difficulty: Difficult

Page and Header: 10, Decimals; 15, Percents

Integrated Process: Teaching/Learning

Objective: 3, 4, 6, 7

15. A patient/client's medication contains 650 mg per ounce. What percentage of this dosage does 375 mg represent?

A) 56.7

B) 57.7

C) 59.8

D) 60.6

Ans: B

Feedback: To estimate what percent 375 mg represents of 650 mg, divide 375/650. To change a fraction into a decimal, divide the numerator by the denominator. Add decimal points in the dividend and quotient as needed: