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
Difficulty: Moderate
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 × 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).

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

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: 375/650 = 15/26 = 0.5769. 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, 0.5769 = 0.577. Next, change a decimal to a percent by moving the decimal point two places to the right, then write the percent sign: 0.577 = 57.7%.

Format: Multiple Choice

Chapter: 1

Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies

Cognitive Level: Apply

Difficulty: Moderate

Page and Header: 10, Decimals; 19, Fractions, Ratio, and Proportion

Integrated Process: Teaching/Learning

Objective: 5, 8

16. The physician prescribed 7.5 mg of a medication that is available in 5-mg tablets. How many tablets would the nurse administer?

A) $\frac{1}{2}$

B) 1

C) $1\frac{1}{2}$

D) 2

Ans: C

Feedback: When the amount of drug prescribed is different from the supply, you can solve the dosage problem with proportion, either using ratios or fractions. When one of the numbers is unknown, the letter x substitutes for the missing number. Proportion (Ratios): 1 tablet : 5 mg :: x tablets : 7.5 mg; 5x = 7.5 mg/5 mg = 1.5 tablets. Proportion (Fractions): 1 tablet/5 mg = x tablets/7.5 mg; 5x = 7.5 mg/5 mg = 1.5 tablets.

Format: Multiple Choice

Chapter: 1

Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies

Cognitive Level: Apply

Difficulty: Moderate

Page and Header: 10, Decimals; 19, Fractions, Ratio, and Proportion

Integrated Process: Teaching/Learning

Objective: 3, 8

17. The physician prescribed 5000 units of a medication that is available in 10,000 units per milliliter. How many milliliters would the nurse administer?

A) 0.5 mL

B) 1 mL

C) 1.5 mL

D) 2 mL

Ans: A

Feedback: When the amount of drug prescribed is different from the supply, you can solve the dosage problem with proportion, either using ratios or fractions. When one of the numbers is unknown, the letter x substitutes for the missing number. Proportion (Ratios): 1 mL : 10,000 units :: x mL : 5000 units; 10,000x = 5000/10,000 = 0.5 mL. Proportion (Fractions): 1 mL/10,000 units = x/5000 units. 10,000x = 5000/10,000 = 0.5 mL.

Format: Multiple Choice

Chapter: 1

Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies

Cognitive Level: Apply

Difficulty: Difficult

Page and Header: 3, Fractions; 19, Fractions, Ratio, and Proportion

Integrated Process: Teaching/Learning

Objective: 1, 8

18. The physician prescribed 20 mg of a medication that is available 10 mg per 15 milliliters. How many milliliters would the nurse administer?

A) 10

B) 15

C) 20

D) 30

Ans: D

Feedback: When the amount of drug prescribed is different from the supply, you can solve the dosage problem with proportion, either using ratios or fractions. When one of the numbers is unknown, the letter x substitutes for the missing

number. Proportion (Ratios): 15 mL : 10 mg :: x mL : 20 mg; 10x = 300/10 = 30 mL. Proportion (Fractions): 15 mL/10 mg = x mL/20 mg; 10x = 300/10 = 30 mL.

Format: Multiple Choice
Chapter: 1
Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies
Cognitive Level: Apply
Difficulty: Moderate
Page and Header: 3, Fractions; 19, Fractions, Ratio, and Proportion
Integrated Process: Teaching/Learning
Objective: 1, 8

19. The physician prescribed 50 mg of a medication that is available as 80 mg per milliliter. How many milliliters would the nurse administer?

A) 0.16
B) 0.6
C) 1.6
D) 16

Ans: B

Feedback: When the amount of drug prescribed is different from the supply, you can solve the dosage problem with proportion, either using ratios or fractions. When one of the numbers is unknown, the letter x substitutes for the missing number. Proportion (Ratios): 1 mL : 80 mg :: x mL : 50 mg; 80x = 50/80 = 5/8 = 0.625 mL. Round off to the nearest tenths: 0.625 mL = 0.6 mL. Proportion (Fractions): 1 mL/80 mg = x mL/50 mg; 80x = 50/80 = 5/8 = 0.625 mL = 0.6 mL. Note: 0.625 mL carried out to the hundredths = 0.63 mL; carried out to tenths = 0.6 mL.

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; 19, Fractions, Ratio, and Proportion
Integrated Process: Nursing Process
Objective: 1, 2, 8
20. The physician prescribed 0.25 g of a medication that is available in 0.5-g tablets. How many tablets would the nurse give?
A) $\frac{1}{2}$
B) 1
C) $1\frac{1}{2}$
D) 2
Ans: A
Feedback: When the amount of drug prescribed is different from the supply, you can solve the dosage problem with proportion, either using ratios or fractions. When one of the numbers is unknown, the letter x substitutes for the missing number. Proportion (Ratios): 1 tablet : 0.5 g :: x tablet : 0.25 g; 0.5x = 0.25/0.5 = $\frac{1}{2}$ tablet. Proportion (Fractions): 1 tablet/0.5 g = x tablet/0.5 g; 0.5x = 0.25/0.5 = $\frac{1}{2}$ tablet. (Note: Clear the decimal points before the final division).

Format: Multiple Choice
Chapter: 1
Client Needs: Physiological Integrity: Physiological Adaptation
Cognitive Level: Analyze
Difficulty: Difficult
Page and Header: 3, Fractions; 10, Decimals; 15, Percents
Integrated Process: Nursing Process
Objective: 4, 5, 6, 7
21. A nurse measured the circumference of an edematous leg and documented "15.5 inches at mid-calf, left leg" on the client's electronic medical record. For comparison, she measured the right calf and documented "12 inches at mid-calf, right leg." The left calf is what percent larger than the right calf?
A) 20
B) 22

C) 23

D) 25

Ans: C

Feedback: This is a multiple-step problem. To estimate the difference between the measurements of the left calf compared to the right calf, subtract 12 inches from 15.5 inches, which equals 3.5 inches. To determine the percent, create a fraction by dividing the difference (3.5 inches) by the largest or total number (15.5 inches). Clear the decimal points before final division. Divide: 3.5/15.5 = 7/31. To change a fraction into a decimal, divide the numerator by the denominator. Add decimal points in the dividend and quotient as needed: 7/31 = 0.225. Carry out to the hundredths place. To round off a decimal, the final number is dropped. When the final number is 5 or greater, drop that number and increase the adjacent number by 1. Therefore, 0.225 = 0.23. Next, change the decimal to a percent by moving the decimal point two places to the right, then write the percent sign: 0.23 = 23%.

Format: Multiple Choice

Chapter: 1

Client Needs: Physiological Integrity: Physiological Adaptation

Cognitive Level: Analyze

Difficulty: Difficult

Page and Header: 3, Fractions; 10, Decimals; 15, Percents

Integrated Process: Teaching/Learning

Objective: 2, 4, 7

22. The physician prescribed taking blood pressure assessments on a patient, lying and standing, every 4 hours, for 24 hours. Determine the percentage difference between the first two systolic readings (140 mm Hg lying and 125 mm Hg standing).

A) 7

B) 9

C) 11

D) 13

Ans: C

Feedback: To estimate the difference between the two systolic readings (140 mm Hg lying and 125 mm Hg standing), subtract 125 mm Hg from 140 mm Hg. To determine the percent, create a fraction by dividing the difference (15 mm Hg) by the larger number or total (140 mm Hg). Divide: 15/140 = 3/28. To change a fraction into a decimal, divide the numerator by the denominator. Add decimal points in the dividend and quotient as needed: 3/28 = 0.107. Carry out to the hundredths 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, 0.107 = 0.11. Next, change the decimal to a percent by moving the decimal point two places to the right, then write the percent sign: 0.11 = 11%.

Format: Multiple Choice
Chapter: 1
Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies
Cognitive Level: Analyze
Difficulty: Difficult
Page and Header: 3, Fractions; 10, Decimals; 15, Percents
Integrated Process: Teaching/Learning
Objective: 4, 5, 7

23. A physician prescribed an IV solution, 500 mL of 0.9% NS with 25 g of an antibiotic, to run over 8 hours. What percent of the IV fluids would be given each hour?

A) 10
B) 12.5
C) 15
D) 18.5

Ans: B

Feedback: To estimate what percent of the IV fluid is given each hour, first determine the amount of IV solution that would be given hourly: divide 500 mL/8 hours = 62.5 mL/hour. Next, divide the hourly amount by the total amount = 62.5/500 = 0.125 mL/hour/500 mL. Change the decimal to a percent by moving

the decimal point two places to the right and then writing the percent sign. Therefore, 0.125 = 12.5%.

Format: Multiple Choice
Chapter: 1
Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies
Cognitive Level: Analyze
Difficulty: Difficult
Page and Header: 10, Decimals; 19, Fractions, Ratio, and Proportion
Integrated Process: Teaching/Learning
Objective: 2, 8, 9

24. A physician prescribed 35 mg of a medication, IM, q4h, prn. The drug is available as 50 mg/mL. How many milliliters would the nurse give for each dose? If the patient/client received six doses over 24 hours, how many total milliliters would the nurse give?

A) 0.5; 3
B) 0.6; 3.6
C) 0.7; 4.2
D) 0.8; 4.8

Ans: C

Feedback: When the amount of drug prescribed is different from the supply, you can solve the dosage problem with proportion, either using ratios or fractions. When one of the numbers is unknown, the letter x substitutes for the missing number. Proportion (Ratios): 1 mL : 50 mg :: x mL : 35 mg; 50x = 35/50 = 0.7 mL. Proportion (Fractions): 1 mL/50 mg = x mL/ 35 mg; 50x = 35/50 = 0.7 mL. To estimate the total milliliters given over 24 hours, multiply 0.7 mL $\times$ 6 doses (24 hours $\div$ 4 hours) = 4.2 mL.

Format: Multiple Choice
Chapter: 1
Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies
Cognitive Level: Analyze

Difficulty: Difficult

Page and Header: 10, Decimals; 19, Fractions, Ratio, and Proportion

Integrated Process: Teaching/Learning

Objective: 1, 5, 8

25. The physician ordered 20 mg of a drug by IV push, to be given over 5 minutes, q12h. The medication is available as 25 mg/5 mL. How many milliliters would the nurse give for each dose? How many milliliters of medication would be given over each minute?

A) 4; 0.8

B) 4; 1

C) 5; 0.8

D) 5; 1

Ans: A

Feedback: When the amount of drug prescribed is different from the supply, you can solve the dosage problem with proportion, either using ratios or fractions. When one of the numbers is unknown, the letter x substitutes for the missing number. Proportion (Ratios): 5 mL : 25 mg :: x mL : 20 mg; 25x = 100/25 = 4 mL. Proportion (Fractions): 5 mL/25 mg = x mL/20 mg; 25x = 100/25 = 4 mL. To estimate the milliliters given over each minute, divide the total milliliters by the total minutes (4 ÷ 5 = 0.8 mL/minute).

Format: Multiple Choice

Chapter: 1

Client Needs: Physiological Integrity: Physiological Adaptation

Cognitive Level: Apply

Difficulty: Moderate

Page and Header: 10, Decimals; 15, Percents

Integrated Process: Communication and Documentation

Objective: 5, 7

26. An elderly patient/client takes her morning medications with 4 ounces of Boost®. The doctor wants her to increase her Boost® intake by 50%. How many additional ounces would the patient/client take with her morning dose of medications? Use the decimal format to estimate the percent increase.

A) 1

B) 1 ½

C) 2

D) 2 ½

Ans: C

Feedback: Percent means "parts per hundred." Percent is a fraction, containing a variable numerator and a denominator that always equals 100. Therefore, 50% = 50/100 (fraction), 50:100 (ratio), and 0.5 (decimal). To determine the additional Boost® the patient/client should drink, multiply 50% × 4 oz. Using the decimal format (0.5 × 4), 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. The answer is that the patient/client would take 2 additional ounces of Boost® with her medications.

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; 7, Dividing Fractions
Integrated Process: Teaching/Learning
Objective: 1, 2, 8

27. The physician prescribed 60 mg of Klonopin (clonazepam) available as a 40 mg scored tablet. The patient/client was advised to take how many tablets for each dose? Use Proportion (Ratios and Fractions) to solve this problem.

A) ½

B) 1

C) 1 ½

D) 2

Ans: C

Feedback: When the amount of drug prescribed is different from the supply, you can solve the dosage problem with proportion, either using ratios or fractions. When one of the numbers is unknown, the letter x substitutes for the missing number. Proportion (Ratios): 1 tab : 40 mg :: x tab : 60 mg; 40x = 60/40 = 1.5 tablets. Proportion (Fractions): 60 mg/40 mg = x /1 tab; 40x = 60/40 = 1.5 tablets.

Format: Multiple Choice
Chapter: 1
Client Needs: Physiological Integrity: Basic Care and Comfort
Cognitive Level: Apply
Difficulty: Moderate
Page and Header: 12, Multiplying Decimals
Integrated Process: Teaching/Learning
Objective: 5

28. A patient/client takes 0.125 mg of a medication, three times daily. How many milligrams would the patient/client take in four days?

A) 0.375

B) 0.75

C) 1.125

D) 1.5

Ans: D

Feedback: First determine the total amount of medication taken in one day. Multiply 0.125 mg x 3 times per day. To multiply a decimal (0.125) by a whole number (3), place the decimal point in the answer by starting at the right and moving the decimal point the same number of places equal to the sum of the decimal points. Therefore, 0.125 mg x 3 = 0.375 mg (the decimal point in the answer is moved three points to the left). This is the amount of medication in one day. Then multiply

0.375 mg x 4 days = 1500. Move the decimal point three places to the left; 1500 = 1.5 mg.

Format: Multiple Choice

Chapter: 1

Client Needs: Physiological Integrity: Basic Care and Comfort

Cognitive Level: Analyze

Difficulty: Difficult

Page and Header: 3, Multiplying Fractions

Integrated Process: Communication and Documentation

Objective: 2

29. A patient/client in a nursing home is weighed weekly. Her initial weight on admission was 174 ½ pounds. After three weeks, she weighed 156 ¼ pounds. How many pounds did the patient/client lose in three weeks? Subtract the mixed numbers after determining the least common denominator (LCD).

A) 12 ½

B) 14 ¾

C) 16 ½

D) 18 ¼

Ans: D

Feedback: Subtract the patient/client's current weight (156 ¼) from her initial weight (174 ½). To subtract mixed numbers, one method is to find the least common denominator (LCD) for ½ and ¼ and leave the fractions as mixed numbers. For 2 and 4, the LCD = 4. 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. After conversion of the fractions (174 2/4 − 156 ¼), the numerators of the fractions are subtracted and the whole numbers are subtracted = 18 ¼ .

Format: Multiple Choice

Chapter: 1

Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies

Cognitive Level: Analyze

Difficulty: Difficult

Page and Header: 15, Percents; 19, Fractions, Ratio, and Proportion

Integrated Process: Communication and Documentation

Objective: 7, 8

30. A diabetic patient/client was prescribed an 1800 calorie ADA diet. The patient/client can have 35% of her calories (630) in the form of carbohydrate (CHO). To maintain this same ratio, how many carbohydrate calories would she be allowed if the ADA diet was reduced to 1500 calories? Use a proportion (ratios) to solve the problem.

A) 525

B) 475

C) 425

D) 375

Ans: A

Feedback: A ratio indicates the relationship between two numbers. A proportion is the relationship between two ratios. When one of the numbers in the proportion is unknown, the letter x substitutes for that number. Set up the ratio/proportion: 630 CHO calories: 1800 ADA calories = x CHO calories : 1500 ADA calories; 1800 x = 630 × 1500/1800; x = 945,000/1800 = 525 CHO calories.