

***Math Calculations for Pharmacy Technicians 3rd  
edition Beale Test Bank***

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## Chapter 02: Review of Basic Mathematical Skills

### Beale: Math Calculations for Pharmacy Technicians, 3rd Edition

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#### MULTIPLE CHOICE

1.  $\frac{1}{2} + \frac{3}{4} =$
- a.  $\frac{5}{4}$
  - b.  $1\frac{1}{4}$
  - c.  $\frac{2}{3}$
  - d. A and B

ANS: D

Use the common denominator of 4 so that  $\frac{1}{2}$  becomes  $\frac{2}{4} + \frac{3}{4} = \frac{5}{4}$  ( $1\frac{1}{4}$ ).

DIF: Application REF: p. 27

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

2. If an order is written for one tab q8h  $\times$  7 d, how many are needed to fill the entire prescription?
- a. 14
  - b. 21
  - c. 28
  - d. Not enough information

ANS: B

$3 \text{ tabs/day} \times 7 \text{ days} = 21 \text{ tabs}$

DIF: Application REF: p. 20

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: 6.3 Calculate doses required

3. A patient is ordered to take 3 tabs bid for one week. How many tablets are needed to fill the prescription?
- a. 21
  - b. 28
  - c. 35
  - d. 42

ANS: D

$3 \text{ tabs/dose} \times 2 \text{ doses/day (bid)} \times 7 \text{ days (one week)} = 42 \text{ tabs}$

DIF: Application REF: p. 20

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: 6.3 Calculate doses required

4. A pharmacy has an inventory reorder point of 200 capsules of an antibiotic. If the total amount of medication on hand is 800 capsules, what percentage is left when the reorder point is reached?

- a. 10%
- b. 25%
- c. 33.3%
- d. 50%

ANS: B

$$\frac{x}{100} = \frac{200}{800} \text{ reduce to } \frac{x}{100} = \frac{1}{4} \qquad 4x = 100 \qquad x = 25 \qquad 25\%$$

DIF: Application REF: p. 52

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

5. A physician orders 45 tablets to be taken one three times a day. If 15 tablets have been taken, what percentage of tablets has the patient taken?
- a. 10%
  - b. 25%
  - c. 33.3%
  - d. 50%

ANS: C

$$\frac{x}{100} = \frac{15}{45} \text{ which reduce to } \frac{x}{100} = \frac{1}{3} \qquad 4x = 100 \qquad x = 33.3$$

33.3%

DIF: Application REF: p. 53

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

6. The inventory for a medication is 450 tablets and it is to be replenished at 50%. At what number of tablets should the medication be reordered?
- a. 200
  - b. 225
  - c. 250
  - d. 275

ANS: B

$$\frac{50}{100} = \frac{x}{450} \text{ which reduce to } \frac{1}{2} = \frac{x}{450} \qquad 2x = 450$$

$x = 225$

DIF: Application REF: p. 30

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

7. The budgeted amount for a year for a medication is \$1,800. What is the budgeted amount for each month?
- a. \$120
  - b. \$140
  - c. \$150
  - d. \$180

ANS: C

$$\$1,800 \div 12 = \$150$$

DIF: Application REF: p. 21

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work.

MSC: PTCB Blueprint: N/A

8. Change  $54/26$  to a mixed number and reduce to lowest possible terms.

- a. 2
- b.  $2\frac{2}{26}$
- c.  $2\frac{1}{13}$
- d.  $1\frac{25}{26}$

ANS: C

$$54 \div 26 = 2\frac{2}{26}, \text{ which reduces to } 2\frac{1}{13}$$

DIF: Application REF: p. 23

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work.

MSC: PTCB Blueprint: N/A

9. Change the following to an *improper* fraction and reduce to lowest terms: 2 and  $4/6$ .

- a.  $2\frac{2}{3}$
- b.  $\frac{14}{6}$
- c.  $\frac{16}{6}$
- d.  $\frac{8}{3}$

ANS: D

$$2 \times 6 = 12, 12 + 4 = 16 \text{ so } \frac{16}{6}, \text{ which reduces to } \frac{8}{3}.$$

DIF: Application REF: p. 23

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work.

MSC: PTCB Blueprint: N/A

10. A prescription requires  $\frac{3}{4}$  of a pint of water for reconstitution. The only measuring device available measures  $\frac{1}{3}$  pint. How many times should this container be filled to make  $\frac{3}{4}$  pint?

- a. 2
- b.  $2\frac{1}{4}$
- c.  $2\frac{1}{3}$
- d.  $2\frac{1}{2}$

ANS: B

To calculate how many times you need to fill a  $\frac{1}{3}$  measuring cup to make  $\frac{3}{4}$ , see how many times  $\frac{1}{3}$  goes into  $\frac{3}{4}$ , which is  $\frac{3}{4} \div \frac{1}{3}$ . Invert and multiply so  $\frac{3}{4} \times \frac{3}{1} = \frac{9}{4}$ , which reduces to  $2\frac{1}{4}$ .

DIF: Application REF: p. 30

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work.

MSC: PTCB Blueprint: N/A

11. Convert 0.01% to a fraction and reduce to lowest terms.
- 1/100
  - 1/1,000
  - 1/10,000
  - None of the above

ANS: C

0.01% becomes 0.01/100. To remove the decimal point from the numerator, multiply both the numerator and the denominator by 100/100 to equal 1/10,000.

DIF: Application REF: pp. 41-42

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

12. If a patient requires 10 tablets for a 5-day supply, how many are required for 30 days?
- 30
  - 60
  - 90
  - 120

ANS: B

Use the ratio and proportion method to solve 10 is to 5 as  $x$  is to 30

$$\frac{10}{5} = \frac{x}{30} \quad 5x = 300 \quad x = 300 \div 5 = 60.$$

DIF: Application REF: p. 49

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: 6.3 Calculate doses required

13. A stock bottle contains 500 tablets. 100 tablets have been used to fill a prescription. What percentage of the container is left?
- 90%
  - 85%
  - 80%
  - 75%

ANS: C

$$500 - 100 = 400; \frac{400}{500} = \frac{x}{100}, \text{ which reduces to } \frac{4}{5} = \frac{x}{100} \quad 5x = 400 \quad x = 400 \div 5 = 80$$

80%

DIF: Application REF: pp. 52-53

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

14. A patient is to take 3 tablets a day for one week. How many tablets are needed to fill the prescription?
- 15
  - 21
  - 28
  - 42

ANS: B

$$3 \text{ tablets/day} \times 7 \text{ days} = 21 \text{ tablets}$$

DIF: Application REF: p. 20

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: 6.3 Calculate doses required

15. 30 tablets are what percent of a 1,000-tablet bottle?
- a. 3%
  - b. 15%
  - c. 30%
  - d. 60%

ANS: A

$$\frac{x}{100} = \frac{30}{1,000}$$

DIF: Application REF: p. 52

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

16. What is 60% of 500 g?
- a. 30 g
  - b. 60 g
  - c. 150 g
  - d. 300 g

ANS: D

$$\frac{60}{100} = \frac{x}{500 \text{ g}} \text{ cross multiply and divide or } 500 \text{ g} \times 0.6 = 300 \text{ g}$$

DIF: Application REF: p. 52

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: 6.3 Calculate doses required

17. How much would a customer save with a 15% discount on a 500-count bottle of low dose aspirin that costs \$7.95?
- a. \$0.79
  - b. \$1.19
  - c. \$1.79
  - d. \$2.19

ANS: B

$$\frac{15}{100} = \frac{x}{\$7.95} \text{ or } \$7.95 \times 0.15 = \$1.19$$

DIF: Application REF: p. 50

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

18. A patient's insurance only allows a refill when 70% of the prescription has been taken. If a patient has taken 36 capsules out of her prescription of 60 capsules, is she eligible for a refill?
- No, that is only 40%
  - No, that is only 60%
  - Yes, that is 70%
  - Yes, that is 83%

ANS: B

$$\frac{x}{100} = \frac{36}{60} \quad x = 60.$$

DIF: Application REF: p. 52

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

19. A patient only has \$5 to purchase his prescription medication. The prescription for 30 tablets costs \$25. How many tablets can he afford with \$5?
- 5
  - 6
  - 7
  - 8

ANS: B

$$\frac{\$25}{30 \text{ tabs}} = \frac{\$5}{x} \quad 25x = 150 \text{ tabs} \quad x = 6 \text{ tabs}$$

DIF: Application REF: p. 50

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

20. A physician tells the patient to drink eight 8-oz glasses of water per day. How many ounces of water should the patient drink each day to follow this order?
- 32 oz
  - 64 oz
  - 96 oz
  - 128 oz

ANS: B

$$8 \times 8 = 64$$

DIF: Application REF: p. 20

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: 6.3 Calculate doses required

21. A doctor orders a patient to take 975 mg of Tylenol. The tablets available are 325 mg each. How many are needed for one dose?
- 2
  - 3
  - 4
  - 5

ANS: B

$$975 \div 325 = 3$$

DIF: Application REF: p. 21

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: 6.3 Calculate doses required

22. A child is to be given 2.5 mL of medication four times a day for 10 days. How much is needed for *one* day?
- 5 mL
  - 10 mL
  - 50 mL
  - 100 mL

ANS: B

$$4 \times 2.5 = 10$$

DIF: Application REF: p. 37

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: 6.3 Calculate doses required

23. Divide 102.34 by 12.567 and round the answer to the nearest hundredth.
- 8.1
  - 8.14
  - 8.143
  - 8.1436

ANS: B

Only 8.14 is rounded to the hundredths position.

DIF: Application REF: p. 34 | p. 38

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

24. Perform the following subtraction and round to the hundredths place:  $654.1 - 45.1256$ .
- 607.97
  - 608
  - 608.97
  - 609

ANS: C

$$654.1 - 45.1256 = 608.9744, \text{ which rounds to } 608.97.$$

DIF: Application REF: pp. 34-35

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

25. Perform the following division problem:  $2\frac{3}{8} \div 1\frac{5}{6}$ .
- $1\frac{5}{16}$
  - $4\frac{17}{48}$
  - $1\frac{13}{44}$
  - $1\frac{6}{11}$

ANS: C

$2\frac{3}{8}$  becomes  $\frac{19}{8}$ ;  $1\frac{5}{6}$  becomes  $\frac{11}{6}$ ; since it is a division problem, invert the second fraction and multiply:  $\frac{19}{8} \times \frac{6}{11} = \frac{19}{4} \times \frac{3}{11} = \frac{57}{44} = 1\frac{13}{44}$ .

DIF: Application REF: p. 30

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

26.  $\frac{3}{8} + \frac{7}{10} + \frac{3}{5} = \underline{\hspace{2cm}}$ .
- a.  $1\frac{17}{10}$
  - b.  $1\frac{27}{40}$
  - c.  $1\frac{20}{40}$
  - d.  $1\frac{27}{8}$

ANS: B

Use the LCD of 40 and change all fractions to 40ths:  $\frac{3}{8}$  becomes  $\frac{15}{40}$ ;  $\frac{7}{10}$  becomes  $\frac{28}{40}$ ;  $\frac{3}{5}$  becomes  $\frac{24}{40}$ . Add  $15 + 28 + 24$  and place the answer over 40.  $\frac{67}{40} = 1\frac{27}{40}$ .

DIF: Application REF: pp. 27-28

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

27.  $\frac{1}{4} - \frac{1}{6} = \underline{\hspace{2cm}}$ .
- a.  $\frac{1}{2}$
  - b.  $\frac{1}{12}$
  - c.  $\frac{1}{24}$
  - d.  $\frac{2}{3}$

ANS: B

Use the LDC of 12; change  $\frac{1}{4}$  to  $\frac{3}{12}$ ; change  $\frac{1}{6}$  to  $\frac{2}{12}$   $\frac{3}{12} - \frac{2}{12} = \frac{1}{12}$ .

DIF: Application REF: pp. 27-28

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

28.  $158 - 59 = \underline{\hspace{2cm}}$ .
- a. 217
  - b. 97
  - c. 99
  - d. 63

ANS: C

99 by definition of subtraction

DIF: Application REF: p. 19

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a

pharmacy technician's work.

MSC: PTCB Blueprint: N/A

29.  $4.502 + 14.06 = \underline{\hspace{2cm}}$ .
- a. 18.56
  - b. 10.81
  - c. 18.21
  - d. 10.1

ANS: A

$3.501 + 14.06 = 18.561$ , which rounds to 18.56

DIF: Application REF: p. 35

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work.

MSC: PTCB Blueprint: N/A

30.  $\frac{3}{8} \cdot \frac{5}{6} = \underline{\hspace{2cm}}$ .
- a.  $\frac{13}{42}$
  - b.  $\frac{1}{2}$
  - c.  $\frac{1}{9}$
  - d.  $\frac{5}{16}$

ANS: D

$\frac{3}{8} \times \frac{5}{6} = \frac{15}{48}$ , which reduces to  $\frac{5}{16}$ .

DIF: Application REF: p. 30

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work.

MSC: PTCB Blueprint: N/A

31.  $13.5 \cdot 3.05 = \underline{\hspace{2cm}}$ .
- a. 10.4
  - b. 40.11
  - c. 41.18
  - d. 23.09

ANS: C

$13.5 \times 3.05 = 41.175$ , which rounds to 41.18.

DIF: Application REF: p. 37

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work.

MSC: PTCB Blueprint: N/A

32.  $34.3 \div 6.5 = \underline{\hspace{2cm}}$ .
- a. 5.28
  - b. 5.19
  - c. 4.21
  - d. 28.4

ANS: A

$34.3 \div 6.5 = 5.276$ , which rounds to 5.28.

DIF: Application REF: p. 38

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

33.  $3,467.021 - 34.6701 =$  \_\_\_\_\_.
- a. 5674.2
  - b. 2532.1
  - c. 3223.55
  - d. 3432.35

ANS: D

After lining up decimals,  $3,467.021 - 34.6701 = 3432.3509$ , which rounds to 3432.35.

DIF: Application REF: p. 35

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

34.  $465 + 5.098 + 76.5 =$  \_\_\_\_\_.
- a. 460.5
  - b. 523.75
  - c. 546.60
  - d. 658.23

ANS: C

After lining up decimals,  $465 + 5.098 + 76.5 = 546.598$ , which rounds to 546.60.

DIF: Application REF: p. 27

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

35.  $2\frac{1}{2} + 3\frac{1}{5} + \frac{1}{4} =$  \_\_\_\_\_.
- a.  $5\frac{4}{5}$
  - b.  $5\frac{19}{20}$
  - c.  $4\frac{2}{10}$
  - d.  $5\frac{1}{2}$

ANS: B

$2 + 3 = 5$ , then use the LCD of 20 to add the fractions.  $\frac{1}{2}$  becomes  $\frac{10}{20}$ ,  $\frac{1}{5}$  becomes  $\frac{4}{20}$ ,  $\frac{1}{4}$  becomes  $\frac{5}{20}$  so the total is  $\frac{19}{20}$ .  $5 + \frac{19}{20} = 5\frac{19}{20}$ .

DIF: Application REF: pp. 27-28

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

36.  $9\frac{3}{4} - 1\frac{5}{6} =$  \_\_\_\_\_.
- a.  $7\frac{1}{6}$
  - b.  $8\frac{1}{5}$
  - c.  $7\frac{11}{12}$
  - d.  $8\frac{1}{2}$

ANS: C

Change to improper fractions  $\frac{39}{4}$  and  $\frac{11}{6}$ , use LCD of 12 to obtain  $\frac{117}{12} - \frac{22}{12} = \frac{95}{12}$ .  $95 \div 12 = 7$  with  $\frac{11}{12}$  left over.

DIF: Application REF: p. 37

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

37.  $76.14 \cdot 7.61 =$  \_\_\_\_\_.
- a. 69.12
  - b. 83.77
  - c. 579.43
  - d. 32.9

ANS: C

Multiply the two numbers, place the decimal 4 places from the right, and then round to the hundredth's place.  $76.14 \cdot 7.61 = 579.4254 = 579.43$ .

DIF: Application REF: p. 35

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

38.  $3.562 + 56.01 + 107.431 =$  \_\_\_\_\_.
- a. 267.00
  - b. 579.43
  - c. 167.00
  - d. 546.60

ANS: C

Line up the decimals, add (167.003), and round to the hundredths place.

DIF: Application REF: p. 30

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

39.  $1\frac{5}{8} \div \frac{4}{5} =$  \_\_\_\_\_
- a.  $1\frac{27}{40}$
  - b.  $7\frac{11}{12}$
  - c.  $2\frac{1}{32}$
  - d.  $8\frac{7}{14}$

ANS: C

Change the mixed number to the improper fraction  $\frac{13}{8}$ , invert and multiply  $\frac{13}{8} \times \frac{5}{4} = \frac{65}{32}$ . Change back to an improper fraction.  $65 \div 32 = 2\frac{1}{32}$ .

DIF: Application REF: pp. 27-28

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

40.  $6\frac{3}{8} - 4\frac{5}{6} =$  \_\_\_\_\_

- a.  $1\frac{27}{40}$
- b.  $\frac{5}{16}$
- c.  $2\frac{1}{32}$
- d.  $1\frac{13}{24}$

ANS: D

Change both numbers to improper fractions:  $\frac{51}{8} - \frac{29}{6}$ . Using the common denominator of 24 change both fractions to  $\frac{153}{24} - \frac{116}{24} = \frac{37}{24}$  or  $1\frac{13}{24}$ .

DIF: Application REF: pp. 27-28

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

41.  $\frac{1}{9} + 4\frac{1}{3} + 5\frac{7}{8} = \underline{\hspace{2cm}}$ .
- a.  $9\frac{7}{8}$
  - b.  $10\frac{1}{7}$
  - c.  $13\frac{1}{13}$
  - d.  $10\frac{23}{72}$

ANS: D

Change  $4\frac{1}{3}$  to  $\frac{13}{3}$ . Change  $5\frac{7}{8}$  to  $\frac{47}{8}$ . Then, using the LCD of 72 change the fractions to  $\frac{8}{72} + \frac{312}{72} + \frac{423}{72} = \frac{743}{72}$ .  $743 \div 72 = 10\frac{23}{72}$ .

DIF: Application REF: p. 30

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

42. What is one third of a piece of tape that is 18.6 cm long?
- a. 9.2 cm
  - b. 3.1 cm
  - c. 6.2 cm
  - d. 55.8 cm

ANS: C

$18.6 \text{ cm} \cdot \frac{1}{3} = 6.2 \text{ cm}$  or  $18.6 \text{ cm} \div 3 = 6.2 \text{ cm}$

DIF: Application REF: p. 30

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

43. A bottle of medication contains 60 mL of medication. The physician asks that the patient receive  $\frac{1}{12}$  of the medication. How many milliliters should the patient receive? \_\_\_\_\_
- a. 6 mL
  - b. 5 mL
  - c. 12 mL
  - d. 1 mL

ANS: B

$$60 \text{ mL} - \frac{1}{12}(60\text{mL}) = 5 \text{ mL}$$

DIF: Application REF: p. 26

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: 6.3 Calculate doses required

44. Reduce the following fraction:

$$\frac{45}{90} = \underline{\hspace{2cm}}.$$

- a.  $\frac{1}{2}$
- b.  $\frac{3}{4}$
- c.  $\frac{5}{8}$
- d.  $\frac{2}{5}$

ANS: A

$\frac{1}{2}$ , Divide the numerator and denominator by 45.

DIF: Application REF: p. 26

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

45. Reduce the following fraction:

$$\frac{46}{100} = \underline{\hspace{2cm}}.$$

- a.  $\frac{23}{50}$
- b.  $\frac{7}{5}$
- c.  $\frac{3}{25}$
- d.  $\frac{1}{2}$

ANS: A

$\frac{23}{50}$ , Divide the numerator and denominator by 2.

DIF: Application REF: p. 26

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

46. Reduce the following fraction:

$$\frac{5}{30} = \underline{\hspace{2cm}}.$$

- a.  $\frac{1}{5}$
- b.  $\frac{3}{4}$
- c.  $\frac{1}{6}$
- d.  $\frac{2}{15}$

ANS: C

$\frac{1}{6}$ , Divide the numerator and denominator by 5.

DIF: Application REF: p. 26

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

47. Reduce the following fraction:

$$\frac{76}{120} = \underline{\hspace{2cm}}.$$

- a.  $\frac{11}{40}$
- b.  $\frac{19}{30}$
- c.  $\frac{3}{60}$
- d.  $\frac{7}{15}$

ANS: B

$\frac{19}{30}$ , Divide the numerator and denominator by 4.

DIF: Application REF: p. 23

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

48. Change the following improper fraction to a mixed number:

$$\frac{65}{35} = \underline{\hspace{2cm}}.$$

- a.  $\frac{1}{2}$
- b.  $2\frac{3}{4}$
- c.  $1\frac{6}{7}$
- d.  $1\frac{3}{5}$

ANS: C

$65 \div 35 = 1\frac{30}{35}$ , which reduces to  $1\frac{6}{7}$ .

DIF: Application REF: p. 23

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

49. Change the following improper fraction to a mixed number:

$$\frac{60}{15} = \underline{\hspace{2cm}}.$$

- a. 4
- b. 3
- c. 7
- d. 5

ANS: A

$60 \div 15 = 4$

DIF: Application REF: p. 23

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

50. Change the following improper fraction to a mixed number:

$$\frac{120}{25} = \underline{\hspace{2cm}}.$$

- a.  $4\frac{2}{3}$
- b.  $5\frac{3}{5}$
- c.  $3\frac{1}{2}$

d.  $4\frac{4}{5}$

ANS: D

$120 \div 25 = 4\frac{20}{25}$ , which reduces to  $4\frac{4}{5}$ .

DIF: Application REF: p. 23

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

51. Change the following improper fraction to a mixed number:

$\frac{250}{75} = \underline{\hspace{2cm}}$ .

a.  $3\frac{1}{3}$

b.  $3\frac{2}{5}$

c.  $4\frac{1}{2}$

d.  $2\frac{1}{3}$

ANS: A

$250 \div 75 = 3\frac{25}{75}$ , which reduces to  $3\frac{1}{3}$ .

DIF: Application REF: p. 23

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

52. Change the following mixed numbers to improper fractions:

$5\frac{15}{16} = \underline{\hspace{2cm}}$ .

a.  $\frac{23}{4}$

b.  $\frac{84}{16}$

c.  $\frac{95}{16}$

d.  $\frac{124}{16}$

ANS: C

$16 \times 5 = 80 + 15 = \frac{95}{16}$ .

DIF: Application REF: p. 23

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

53. Change the following mixed numbers to improper fractions:

$5\frac{3}{4} = \underline{\hspace{2cm}}$ .

a.  $\frac{53}{4}$

b.  $\frac{15}{4}$

c.  $\frac{23}{4}$

d.  $\frac{1}{2}$

ANS: C

$4 \times 5 = 20 + 3 = \frac{23}{4}$ .

DIF: Application REF: p. 23

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

54. Change the following mixed numbers to improper fractions:

$8\frac{1}{6} = \underline{\hspace{2cm}}.$

- a.  $\frac{49}{6}$
- b.  $\frac{17}{9}$
- c.  $\frac{23}{5}$
- d.  $\frac{9}{6}$

ANS: A

$6 \times 8 = 48 + 1 = \frac{49}{6}.$

DIF: Application REF: p. 23

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

55. Change the following mixed numbers to improper fractions:

$97\frac{1}{10} = \underline{\hspace{2cm}}.$

- a.  $\frac{65}{10}$
- b.  $\frac{970}{10}$
- c.  $\frac{971}{10}$
- d.  $\frac{98}{10}$

ANS: C

$10 \times 97 = 970 + 1 = \frac{971}{10}.$

DIF: Application REF: p. 23

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

56. Convert the following fraction to a decimal:

$\frac{1}{2} = \underline{\hspace{2cm}}.$

- a. 0.5
- b. 1.5
- c. 0.25
- d. 0.333

ANS: A

$1 \div 2 = 0.5.$

DIF: Application REF: p. 23

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

57. Convert the following fractions to decimals:

$\frac{2}{3} = \underline{\hspace{2cm}}.$

- a. 0.25

- b. 0.67
- c. 0.5
- d. 0.3333

ANS: B

$2 \div 3 = 0.6666\dots$ , which rounds to 0.67.

DIF: Application REF: p. 41

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work.

MSC: PTCB Blueprint: N/A

58. Convert the following fractions to decimals:

$\frac{3}{4} = \underline{\hspace{2cm}}$ .

- a. 0.25
- b. 0.45
- c. 0.75
- d. 0.5

ANS: C

$3 \div 4 = 0.75$ .

DIF: Application REF: p. 41

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work.

MSC: PTCB Blueprint: N/A

59. Convert the following fractions to decimals:

$1\frac{1}{2} = \underline{\hspace{2cm}}$ .

- a. 1.75
- b. 1.25
- c. 1.33
- d. 1.5

ANS: D

$1 + 1 \div 2 = 1.5$ .

DIF: Application REF: p. 41

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work.

MSC: PTCB Blueprint: N/A

60. Convert the following fractions to decimals:

$\frac{1}{10} = \underline{\hspace{2cm}}$ .

- a. 0.1
- b. 0.8
- c. 10.1
- d. 0.01

ANS: A

$1 \div 10 = 0.1$ .

DIF: Application REF: p. 40

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work.

MSC: PTCB Blueprint: N/A

61. Convert the following decimal to a fraction and reduce:

$0.48 = \underline{\hspace{2cm}}$ .

- a.  $\frac{12}{48}$
- b.  $\frac{1}{2}$
- c.  $\frac{12}{25}$
- d.  $\frac{1}{5}$

ANS: C

$\frac{48}{100}$  divided by  $\frac{4}{4}$  reduces to  $\frac{12}{25}$ .

DIF: Application REF: p. 40

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

62. Convert the following decimal to a fraction and reduce:

$0.01 = \underline{\hspace{2cm}}$ .

- a.  $\frac{1}{100}$
- b.  $\frac{1}{10}$
- c.  $\frac{1}{46}$
- d.  $\frac{2}{200}$

ANS: A

$1 \div 100 = 0.01$ .

DIF: Application REF: p. 40

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

63. Convert the following decimal to a fraction and reduce:

$0.68 = \underline{\hspace{2cm}}$ .

- a.  $\frac{1}{5}$
- b.  $\frac{17}{25}$
- c.  $\frac{13}{25}$
- d.  $\frac{2}{3}$

ANS: B

$\frac{68}{100}$  divided by  $\frac{4}{4}$  equals  $\frac{17}{25}$ .

DIF: Application REF: p. 40

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

64. Convert the following decimal to a fraction and reduce:

$0.2 = \underline{\hspace{2cm}}$ .

- a.  $\frac{1}{5}$
- b.  $\frac{1}{3}$
- c.  $\frac{2}{20}$

d.  $\frac{2}{3}$

ANS: A

$\frac{2}{10}$  divided by  $\frac{2}{2} = \frac{1}{5}$ .

DIF: Application REF: p. 44

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

65. Convert the following fractions to percents:

$\frac{1}{6} = \underline{\hspace{2cm}}\%$

- a. 16.67
- b. 33.32
- c. 26.12
- d. 19.12

ANS: A

1 divided by 6 times 100 rounds to 16.67% or

$\frac{1}{6} = \frac{x}{100}$ .

DIF: Application REF: p. 44

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

66. Convert the following fractions to percents:

$\frac{3}{8} = \underline{\hspace{2cm}}\%$

- a. 32.9
- b. 37.5
- c. 23.4
- d. 42.1

ANS: B

$3 \div 8 = 0.375 \cdot 100 = 37.5\%$  or  $\frac{3}{8} = \frac{x}{100}$ .

DIF: Application REF: p. 44

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

67. Convert the following fractions to percents:

$\frac{1}{3} = \underline{\hspace{2cm}}\%$

- a. 66.6
- b. 33.3
- c. 25.0
- d. 73.5

ANS: B

1 divided by 3 times 100 rounds to 33.3%.

DIF: Application REF: p. 44

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

68. Convert the following fractions to percents:

$$\frac{7}{10} = \underline{\hspace{2cm}}\%$$

- a. 35
- b. 23
- c. 7
- d. 70

ANS: D

$$\frac{7}{10} = \frac{x}{100}$$

$$x = 70$$

$$\frac{70}{100} = 70\%$$

DIF: Application REF: p. 44

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

69. Convert the following fractions to percents:

$$4\frac{3}{5} = \underline{\hspace{2cm}}\%$$

- a. 460
- b. 333
- c. 125
- d. 75

ANS: A

$$4 \times 100 = 400\% + 3 \div 5 \times 100 = 60\%.$$

DIF: Application REF: p. 44

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

70. Convert the following fractions to percents:

$$7\frac{1}{9} = \underline{\hspace{2cm}}\%$$

- a. 711.1
- b. 77.9
- c. 23.1
- d. 625.8

ANS: A

$$7 \times 100 = 700\% + 1 \div 9 \times 100 \text{ rounds to } 11.11\%.$$

DIF: Application REF: p. 44

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

71. Convert the following fractions to percent:

$$\frac{2}{3} = \underline{\hspace{2cm}}\%$$

- a. 53
- b. 67
- c. 83

d. 75

ANS: B

2 divided by 3 times 100 rounds to 67%.

DIF: Application REF: p. 44

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

72. Convert the following fractions to percents:

$$\frac{11}{15} = \underline{\hspace{2cm}}\%$$

- a. 21.5
- b. 67.32
- c. 44.8
- d. 73.33

ANS: D

11 divided by 15 times 100 rounds to 73.33%.

DIF: Application REF: p. 44

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

73. Convert the following fractions to percents:

$$\frac{3}{5} = \underline{\hspace{2cm}}\%$$

- a. 60
- b. 24
- c. 35
- d. 78

ANS: A

3 divided by 5 times 100 equals 60% or  $\frac{3}{5} = \frac{x}{100}$ .

DIF: Application REF: p. 44

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

74. Convert the following percents to fractions:

$$\frac{2}{3}\% = \underline{\hspace{2cm}}.$$

- a.  $\frac{1}{150}$
- b.  $\frac{4}{17}$
- c.  $\frac{1}{25}$
- d.  $\frac{2}{3}$

ANS: A

$\frac{2}{3}\%$  is  $\frac{2}{3} \div 100$ . Invert and multiply  $\frac{2}{3} \times \frac{1}{100} = \frac{2}{300} = \frac{1}{150}$ .

DIF: Application REF: pp. 41-42

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

75. Convert the following percents to fractions:

$$0.88\% = \underline{\hspace{2cm}}.$$

- a.  $\frac{11}{1250}$
- b.  $\frac{2}{1577}$
- c.  $\frac{1}{47}$
- d.  $\frac{5}{333}$

ANS: A

$$\frac{0.88}{100} \times \frac{100}{100} = \frac{88}{10,000} \div \frac{8}{8} = \frac{11}{1,250}.$$

DIF: Application REF: pp. 41-42

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

76. Convert the following percents to fractions:

$$4\frac{1}{4}\% = \underline{\hspace{2cm}}.$$

- a.  $\frac{12}{17}$
- b.  $\frac{25}{674}$
- c.  $\frac{17}{400}$
- d.  $\frac{3}{5}$

ANS: C

$$\frac{17/4}{100} = \frac{17}{4} \times \frac{1}{100} = \frac{17}{400}.$$

DIF: Application REF: pp. 41-42

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

77. Convert the following percents to fractions:

$$0.55\% = \underline{\hspace{2cm}}.$$

- a.  $\frac{2}{537}$
- b.  $\frac{5}{17}$
- c.  $\frac{11}{2000}$
- d.  $\frac{21}{3277}$

ANS: C

$$\frac{0.55}{100} \times \frac{100}{100} = \frac{55}{10,000} \div \frac{5}{5} = \frac{11}{2,000}.$$

DIF: Application REF: pp. 41-42

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

78. Convert the following percents to fractions:

$253\% = \underline{\hspace{2cm}}$ .

- a.  $2\frac{26}{100}$
- b.  $\frac{1}{57}$
- c.  $2\frac{4}{15}$
- d.  $2\frac{53}{100}$

ANS: D

$$\frac{253}{100} = 2\frac{53}{100}.$$

DIF: Application REF: pp. 41-42

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

79. Convert the following percents to fractions:

$0.01\% = \underline{\hspace{2cm}}$ .

- a.  $\frac{1}{100}$
- b.  $\frac{1}{10}$
- c.  $\frac{1}{10,000}$
- d.  $\frac{1}{1000}$

ANS: C

$$\frac{0.01}{100} \times \frac{100}{100} = \frac{1}{10,000}.$$

DIF: Application REF: pp. 41-42

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

80. Convert the following percents to decimals:

$0.075\% = \underline{\hspace{2cm}}$ .

- a. 0.075
- b. 0.00075
- c. 75
- d. 0.75

ANS: B

$$\frac{0.075}{100} \times \frac{1,000}{1,000} = \frac{75}{100,000} = 0.00075$$

or  $0.075 \div 100 = 0.00075$ .

DIF: Application REF: p. 45

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

81. Convert the following percents to decimals:

$0.034\% = \underline{\hspace{2cm}}$ .

- a. 0.0034
- b. 0.00034
- c. 34
- d. 3.4

ANS: B

$$0.034 \div 100 = 0.00034.$$

DIF: Application REF: p. 45

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

82. Convert the following percents to decimals:

$$1.67\% = \underline{\hspace{2cm}}.$$

- a. 1.67
- b. 0.00167
- c. 0.167
- d. 0.0167

ANS: D

$$1.67 \div 100 = 0.0167$$

DIF: Application REF: p. 45

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

83. Convert the following decimals to percents:

$$0.5 = \underline{\hspace{2cm}}.$$

- a. 500%
- b. 5%
- c. 0.5%
- d. 50%

ANS: D

$$0.5 \times 100 = 50\%.$$

DIF: Application REF: p. 46

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

84. Convert the following decimals to percents:

$$0.93 = \underline{\hspace{2cm}}.$$

- a. 93%
- b. 9.3%
- c. 0.93%
- d. 930%

ANS: A

$$0.93 \times 100 = 93\%.$$

DIF: Application REF: p. 46

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a

85. Convert the following decimals to percents:

$$1.5 = \underline{\hspace{2cm}}.$$

- a. .150%
- b. 1.5%
- c. 15%
- d. 150%

ANS: D

$$1.5 \times 100 = 150\%.$$

DIF: Application REF: p. 46

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work.

MSC: PTCB Blueprint: N/A

86. Convert the following decimals to percents:

$$0.01 = \underline{\hspace{2cm}}.$$

- a. 1%
- b. 10%
- c. 0.01%
- d. 100%

ANS: A

$$0.01 \times 100 = 1\%.$$

DIF: Application REF: p. 46

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work.

MSC: PTCB Blueprint: N/A

87. Solve the following ratio and proportion problems:

$$\text{gr } 1/4: \text{gr } 1/8:: \text{gr } 1: x$$

- a.  $x = \text{gr } 1/8$
- b.  $x = \text{gr } 5/3$
- c.  $x = \text{gr } 2/3$
- d.  $x = \text{gr } 1/2$

ANS: D

$$\frac{1}{8} \times 1 \div \frac{1}{4} = \frac{1}{8} \times \frac{4}{1} = \frac{4}{8} = \frac{1}{2}.$$

DIF: Application REF: pp. 49-50

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work.

MSC: PTCB Blueprint: 6.3 Calculate doses required

88. Solve the following ratio and proportion problems:

$$25 \text{ mg}: x:: 50 \text{ mg}: 1 \text{ tab}$$

- a.  $x = \frac{3}{5} \text{ tab}$
- b.  $x = \frac{1}{2} \text{ tab}$
- c.  $x = 1 \text{ tab}$
- d.  $x = 1\frac{1}{2} \text{ tab}$

ANS: B

$$25 \times 1 \div 50 = \frac{1}{2}.$$

DIF: Application REF: pp. 49-50

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: 6.3 Calculate doses required

89. Solve the following ratio and proportion problems:

$$30: 45:: 5: x$$

- a.  $x = 7.5$
- b.  $x = 17.5$
- c.  $x = 5.7$
- d.  $x = 25$

ANS: A

$$45 \times 5 \div 30 = 7.5.$$

DIF: Application REF: pp. 49-50

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

90. Solve the following ratio and proportion problems:

$$\frac{25}{200} = \frac{x}{40}$$

- a.  $x = 10$
- b.  $x = 5$
- c.  $x = 15$
- d.  $x = 1$

ANS: B

$$200x = 1,000 \quad x = 1,000 \div 200 = 5.$$

DIF: Application REF: pp. 49-50

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

91. Solve the following ratio and proportion problems:

$$\frac{2.5}{7.5} = \frac{x}{12}$$

- a.  $x = 3.5$
- b.  $x = 4$
- c.  $x = 2.5$
- d.  $x = 1$

ANS: B

$$2.5 \times 12 = 30 \quad 30 \div 7.5 = 4.$$

DIF: Application REF: pp. 49-50

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

92. Solve the following ratio and proportion problems:

$$\frac{\$2}{30 \text{ tabs}} = \frac{x}{45 \text{ tabs}}$$

- a.  $x = \$12$
- b.  $x = \$2$
- c.  $x = \$3$
- d.  $x = \$5$

ANS: C

$$2 \times 45 = 90 \qquad 90 \div 30 = 3.$$

DIF: Application REF: pp. 49-50

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

93. Solve the following ratio and proportion problems:

$$\frac{15}{75} = \frac{100}{x}$$

- a.  $x = 35$
- b.  $x = 173$
- c.  $x = 500$
- d.  $x = 250$

ANS: C

$$75 \times 100 = 7,500 \qquad 7,500 \div 15 = 500.$$

DIF: Application REF: pp. 49-50

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

94. Solve the following ratio and proportion problems:

$$\frac{4}{160} = \frac{x}{100}$$

- a.  $x = 12.5$
- b.  $x = 2.5$
- c.  $x = 2$
- d.  $x = 5.2$

ANS: B

$$4 \times 100 = 400 \qquad 400 \div 160 = 2.5.$$

DIF: Application REF: pp. 49-50

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work. MSC: PTCB Blueprint: N/A

95. Solve the following ratio and proportion problems:

A patient has 10 mg scored (dividable) tablets and needs to take 25 mg per dose. How many tablets does she need for one dose?

- a. 1 tablet
- b.  $2\frac{1}{2}$  tablets
- c.  $1\frac{1}{2}$  tablets
- d.  $3\frac{1}{2}$  tablets

ANS: B

$$\frac{10 \text{ mg}}{1 \text{ tab}} = \frac{25 \text{ mg}}{x}$$

$$10x = 25$$

$$x = 2.5 \text{ or } 2\frac{1}{2}$$

DIF: Application REF: pp. 49-50

OBJ: ASHP Objective: 12.1 (Applying) Perform mathematical calculations frequently needed in a pharmacy technician's work.

MSC: PTCB Blueprint: 6.3 Calculate doses required