

Pharmacy Math Skills Offerings

Pre-Employment Math-Screen™

- 50 questions that sample all math skills content areas
- Facilitates comparison between potential hires
- Print results for recordkeeping

Competency Verification Math-Screen™

- 80 questions randomly selected from test bank of 150 questions
- Each test is different so employees never take same test twice
- User information is stored in the LMS
- Used for competency verification or PTCB preparation

Pharmacy Math Skills Course Lessons and Learning Objectives

1. Introduction

- Express the importance of calculations, skills required and the problem solving approach to calculations in pharmacy.
- Recognize symbols, terminology and abbreviations commonly used in pharmacy as well as their potential for misuse.
- Perform basic addition, subtraction, division and multiplication.
- Describe common elements of a prescription for medication.
- Identify basic dosage forms.
- Discuss the use of pharmacy time in patient dose scheduling.
- Describe some basic precautions to reduce the risk of calculation errors.

2. Measurement Systems

- Identify commonly used units of measure.
- Identify abbreviations and symbols used in pharmacy measurement systems.
- Perform calculations and conversions between units of measure in the same and among different measurement systems.
- Calculate body surface area for complex medication delivery.

3. Basic Math (2 lessons)

- Identify and convert numbers to/from the Roman and Arabic numeral systems.
- Explain how to reduce fractions.
- Calculate clinical problems involving the addition and subtraction of fractions.
- Define and compare decimals and fractions.
- Convert decimals to fractions and fractions to decimals.

- Develop an understanding of place values in decimals and how to accurately write numbers in their decimal form.
- Perform basic mathematical functions with decimals.
- Solve ratios and proportions in calculations.
- Convert percents to and from decimals.
- Calculate percent strengths in pharmacy practice.

4. Percents and Concentrations

- Demonstrate the relationship between percents, ratios, decimals and fractions.
- Describe percentage strength as weight in volume, volume in volume and weight in weight.
- Perform appropriate calculations based on a given percentage strength.
- Calculate product strengths by using percents and ratios.

5. Calculations Required for Dosing

- Utilize methods for calculating doses using the number of doses, size of doses, and total quantity of medication.
- Calculate doses based on recommended dose ranges and product label strength.
- Identify methods of calculating doses for medication administration in pediatric patients.
- Apply knowledge of conversion factors to accurately calculate medication doses.

6. Dilution and Reconstitution

- Utilize methods for calculating doses using the number of doses, size of doses, and total quantity of medication.
- Calculate doses based on recommended dose ranges and product label strength.
- Identify methods of calculating doses for medication administration in pediatric patients.
- Apply knowledge of conversion factors to accurately calculate medication doses.

7. Sterile Compounding Calculations

- Describe calculations required to increase and decrease the concentration of components in compounded sterile preparations (CSPs).
- Identify methods used to calculate the amounts additives to CSPs to be compounded.
- Explain the use of direct statement, percentage strength and ratio strength to accurately determine amounts of components to be added during the preparation of sterile solutions.
- Recall and apply knowledge of ratios and proportions to accurately perform calculations required for preparation of CSPs.