

WORKING AS A PHARMACY TECHNICIAN

Performance Standard 6D.I

Use an equation representing a situation of direct variation to solve problems and make a comparison accordingly:

- *Mathematical knowledge:* set up and solve proportions for direct and inverse variation of simple quantities; solve problems by recognizing how an equation changes when parameters change.
- *Strategic knowledge:* to solve problems of direct variation situations.
- *Explanation:* explain completely and clearly what was done and why it was done.

Procedures

1. ***In order to solve problems using comparison of quantities, ratios, proportions and percents (6D)***, provide students with sufficient learning opportunities to develop the following skill:
 - Set up and solve proportions for direct and inverse variation of simple quantities.Accurately filling physician drug prescriptions for patients requires math skills that utilize the concepts of quantities, ratios, proportions and percents. These mathematics skills are key in the “Academic Foundation” specified in the National Health Care Standards.
2. Provide each student a copy of the "Working as a Pharmacy Technician" task sheet and the rubric. Have students review and discuss the task to be completed and how the rubric will be used to evaluate it.
3. Give students the assessment task sheet and have them work individually. They may use calculators to solve the problems.

Renee Folk, a pharmacy technician, has been working at Globe Hospital, under the supervision of a pharmacist, for three years. Renee is aware that a medication is often not packaged in the dose that is ordered by a physician. It is her responsibility to measure and prepare the prescribed dose. All calculations must be double checked to ensure accuracy. When Renee arrives at work, she has five prescriptions waiting for her to fill. The pharmacy has these drugs in stock but not in the prescribed amount. Renee must prepare these to be sent to the nursing units.
4. Evaluate each student's work using all dimensions of the rubric and its guide to determine the performance level. Check accuracy of the problems using the following answer key.
 - Question 1: 99 Gm. of lanolin
 - Question 2: 2.66 or 2.7 ml.
 - Question 3: 99.6 or 100 gts. per minute.
 - Question 4: 2.0 ml.
 - Question 5: 1.2 ml.
 - Question 6: Too much of a drug could produce undesired toxic effects, while too little would not provide the therapeutic results desired.

Examples of Student Work

1. [Meets](#)
2. [Exceeds](#)

Time Requirements

- 30 minutes

Resources

- Copies of the "Working as a Pharmacy Technician" task sheet
- Calculator
- Mathematics Rubric

NAME _____ DATE _____

WORKING AS A PHARMACY TECHNICIAN

Student Task Sheet

Renee Folk, a pharmacy technician, has been working at Globe Hospital, under the supervision of a pharmacist, for three years. Renee is aware that a medication is often not packaged in the dose that is ordered by a physician. It is her responsibility to measure and prepare the prescribed dose. All calculations must be double checked to ensure accuracy.

When Renee arrives at work, she has five prescriptions waiting for her to fill. The pharmacy has these drugs in stock but not in the prescribed amount. Renee must prepare these to be sent to the nursing units. For each calculation made below, explain why you made the calculation.

1. A 480ml. jar of skin cream contains 18 g. of lanolin. The order is to mix a 2640 ml. "bucket" of cream. How many grams of lanolin does this bucket of cream contain?
2. The doctor ordered Bicillin L-A 1,000,000 units for deep injection. It is available as 750,000 units per 2 ml. What is the correct dose for injection?
3. IV order: Levaquin 500mg IV daily. Infuse over 60 minutes.
IV label: Levaquin 500mg in 100 ml. D5W
Drip factor: 60 drops/ml.
What is the correct flow rate in drops per minute for this order?
4. Drug order: Amikacin 7.5 mg./kg. every 12h in 100ml. D5W
Drug label: Amikacin 250mg/ml.
Patient wt: 146 lbs.
How many ml. of the drug must be added to the IV fluid?
5. Drug order: Oncovin 1.5 mg./m² IV
Drug label: Oncovin 1mg./ml.
Patient BSA: 0.8m²
How much of the drug must be sent to the nursing unit for this patient?
6. Renee's math skills are very important. Why is an error in calculation not tolerated in the pharmacy?

MATHEMATICS RUBRIC

NAME _____ DATE _____

- Exceeds standard (must receive a 4 in each area)
- Meets standard (must receive all 3's or a combination of 3's and 4's)
- Approaches standard (must receive all 2's or any combination which may include a 3 or a 4)
- Begins standard (has no 3's or 4's but not all 1's)
- Absent (has all 1's and 0's)

	Mathematical Knowledge	Strategic Knowledge	Explanation
4	<ul style="list-style-type: none"> • Wrote the right answer. • Used math words correctly to show understanding of how math works. • Worked it out with no mistakes. • Used the right math words and labeled the answers. 	<ul style="list-style-type: none"> • Identified all the important parts of the problem, and knew how they went together. • Showed all the steps used to solve the problem. 	<ul style="list-style-type: none"> • Wrote what was done and why it was done. • If a drawing was used, all of it was explained in writing.
3	<ul style="list-style-type: none"> • Knew how to do the problem, but made small mistakes. 	<ul style="list-style-type: none"> • Identified most of the important parts of the problem. • Showed most of the steps used to solve the problem. 	<ul style="list-style-type: none"> • Wrote mostly about what was done. • Wrote a little about why it was done. • If a drawing was used most of it was explained in writing.
2	<ul style="list-style-type: none"> • Understood a little, but made a lot of big mistakes. 	<ul style="list-style-type: none"> • Identified some of the important parts of the problem. • Showed some of the steps used to solve the problem. 	<ul style="list-style-type: none"> • Wrote some about what was done or why it was done but not both. • If a drawing was used, some of it was explained in writing.
1	<ul style="list-style-type: none"> • Tried to do the problem, but didn't understand it. 	<ul style="list-style-type: none"> • Identified almost no important parts of the problem. • Showed almost none of the steps used to solve the problem. 	<ul style="list-style-type: none"> • Wrote or drew something that didn't go with the answer. • Wrote an answer that was not clear.
0	<ul style="list-style-type: none"> • No answer attempted. 	<ul style="list-style-type: none"> • No strategy shown. 	<ul style="list-style-type: none"> • No written explanation.
Score			