

Preparing for the Drug Dosage Calculation Competency Exam
BSN Completion Applicants

The Drug Dosage Calculation Competency Exam is required for all BSN Completion applicants. Two opportunities to test are allowed. The exam is administered by UVICELL between October 15th and November 15th.

Test Center Locations:

St. Croix

UVICELL Center
#23A Hospital Street
Frederiksted, St. Croix
(340) 692-4230

St. Thomas:

UVICELL Center
Faculty East
St. Thomas Campus
(340) 693-1100

Applicants should review a drug dosage calculation textbook, brush up on calculation skills and be ready to demonstrate competency in calculating drug dosages. A score of 90% or better is required in order to pass the exam and two testing opportunities are permitted. Applicants who score less than 90% must take, and pass, NUR 104: Drug Dosage Calculation concurrently with NUR 210: Bridge to Professional Nursing, even if they have taken this, or a similar course, previously.

The following table contains the test blueprint for the exam.

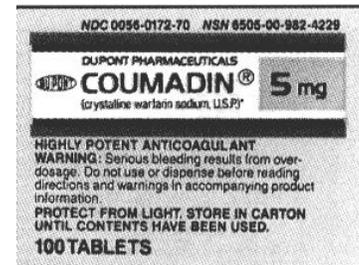
Topic	Questions
Conversions: metric, apothecary, household conversions: ounces; pounds; teaspoons; tablespoons, cups	5 conversion questions worth 1 point each
Oral med tab or cap (with label)	1
Oral med mLs (with label)	1
Parenteral (with label)	3 (mg/mL and units/mL or mEq/mL)
Syringes	5 different syringe questions worth 1 point each; should include TB, insulin (2 types of insulin in one syringe), 3mL, 5 mL and one other
Powdered med with single way to reconstitute (with label)	2
IV flow rate (mL/hr)	1
IV flow rate (gtt/min)	1
IVBP flow rate (could be mL/hr or gtt/min)	1
Infusion time	1
Completion time (using military time)	1
Dosage by weight (with label)	2
Continuous IV med (flow rate or medication delivered)	2
Direct IV (IV push) (with label if possible)	2
Total	20

Recommended text:

- Olsen, J., Giangrasso, A. & Shrimpton, D. (2015). *Medical dosage calculations: A dimensional analysis approach*. Boston, MA: Pearson

Sample Test:

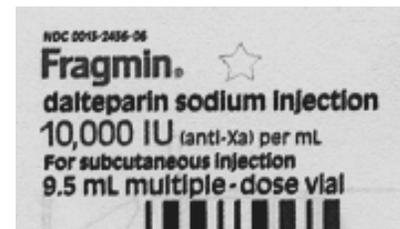
1.
 - a. 1.5 g = _____ mg
 - b. 200 lb = _____ kg
 - c. 10 oz = _____ mL
 - d. 0.1 mg = _____ mcg
 - e. 2 cups = _____ mL
2. Coumadin 15 mg po is ordered. How many tablets will you give?



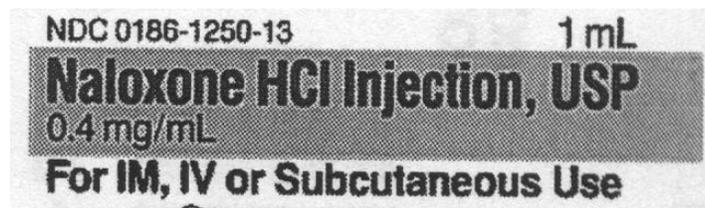
3. Diflucan 100 mg po daily. How many mLs will you give the patient?



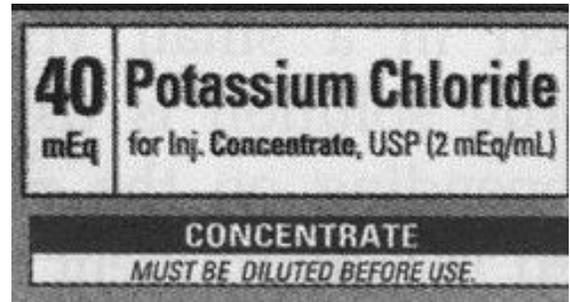
4. Fragmin 5,000 units is to be given. How many mLs will you give the patient?



5. Narcan (naloxone) 0.3 mg IV stat for respiratory depression. How many mL you will draw up in the syringe?

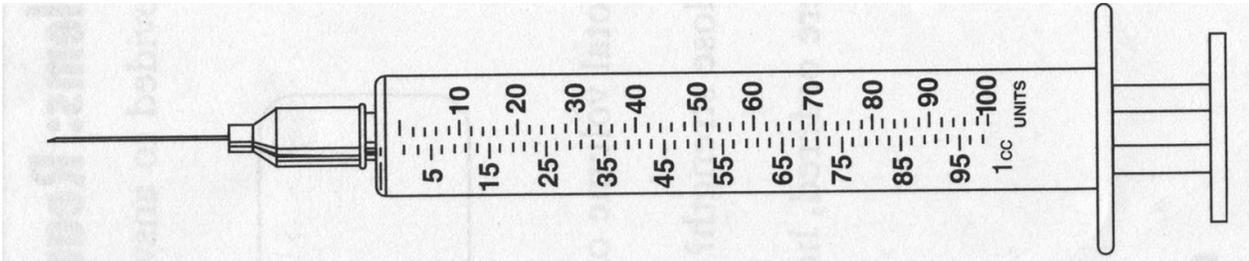


6. Potassium Chloride 20 mEq is ordered to be added to an IV solution. How many mLs will you draw up?

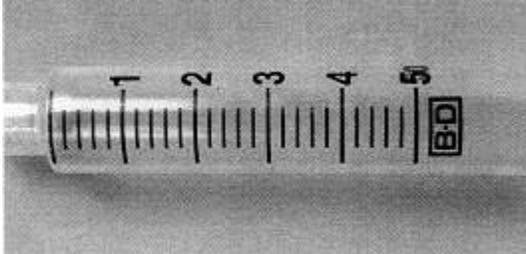


7. Mark the syringes below to indicate the stated amount.

Regular insulin 7 units + NPH insulin 24 units is ordered for 7:30am. Indicate the dosage you would draw up first plus the combined dose on the syringe with arrows.



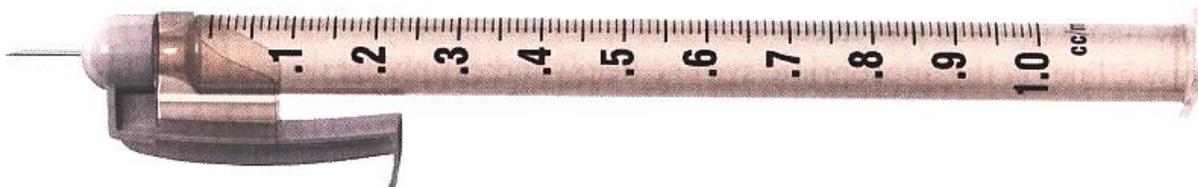
Indicate 4.2 mL by drawing an arrow on the syringe.



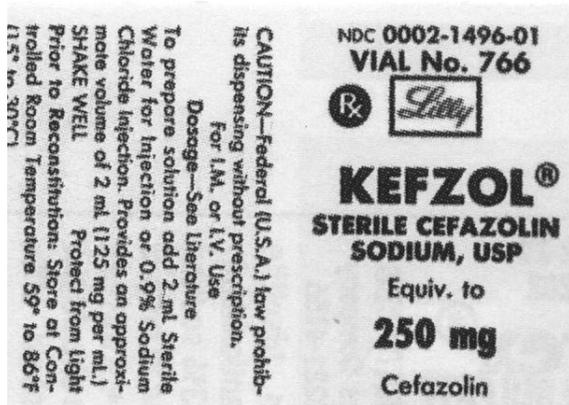
Indicate 2.7 mL by drawing an arrow on the syringe.



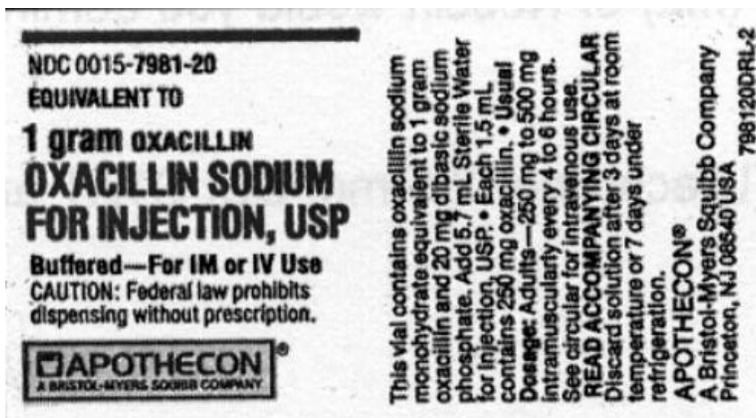
Indicate 0.33 mL by drawing an arrow on the syringe.



8. Kefzol 125mg IM is ordered. How many mLs will you draw up to administer this dose?



9. Oxacillin 500 mg IV is ordered. How many mLs will you draw up?



10. 1000 mL of IV fluid is to infuse over 8 hrs. Calculate the flow rate in mL/hr.

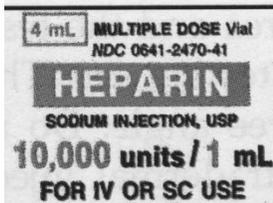
11. 1000 mL of IV fluid is to infuse over 12 hr. Calculate the flow rate in gtt/min using microdrop tubing?

12. 100 mL is to infuse over 45 min. via IV pump. What will you set on the pump in mL/hr?

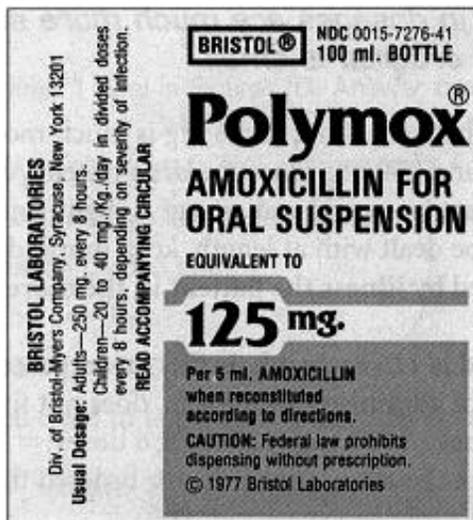
13. 1000 mLs of IV fluid is infusing at 25 gtt/min using 15 gtt/mL tubing. What is the infusion time (duration) of this bag of IV fluid? (Round to the nearest hour)

14. An IV of 1000 mL is infusing at 50 gtt/min using IV tubing calibrated at 20 gtt/mL. If the IV was started at 8 am, when will it be completed? Round to the nearest hour and give the answer in military time.

15. The MD orders 80 units/kg of Heparin to be given stat. How many mL will you draw up to administer the ordered dose? The patient weighs 188 lbs.



16. The provider orders 125mg of amoxicillin Q. 8 hrs. for a patient weighing 58 lbs. Calculate the daily dosage range recommended on the label and compare the daily dose ordered by the doctor. Does the provider order fall within the usual dosage range?

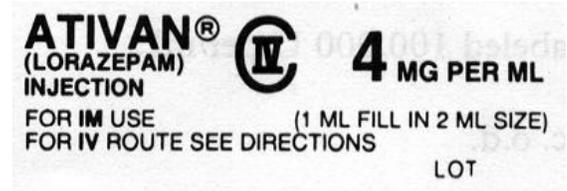


17. Aggrastat is ordered to infuse at 0.1 mcg/kg/min for a patient weighing 136 lbs. A premixed IV bag contains 12.5mg/250mL. How many mL/hr will you set on the IV pump?

18. A patient is receiving Aminophylline IV at 20 mL/hr. The IV contains 2g Aminophylline in 250 mL of IV fluid. How many mg/hr is the patient receiving?

19. Ativan 4 mg IV push is ordered for sedation. The drug reference says to dilute the drug immediately before use with an equal volume of diluent. Inject slowly at 2 mg/min.

To administer this medication, the nurse will go to the room with a syringe containing _____ mL and give the med over _____ minutes at a rate of _____ mL/min.

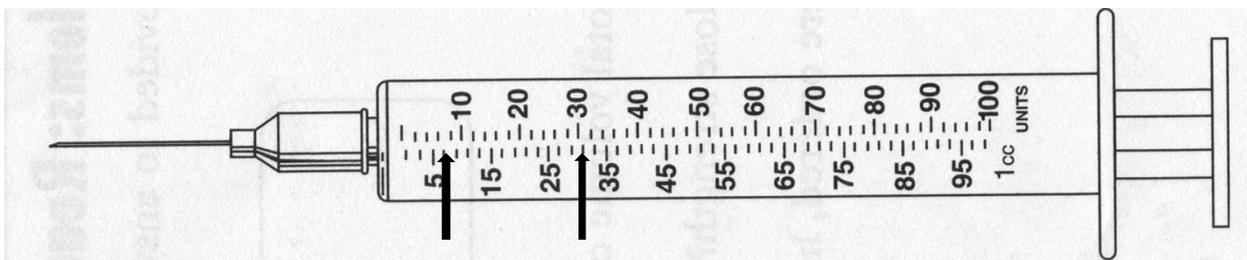


20. Lidocaine 100 mg IV bolus is ordered for cardiac dysrhythmia. The drug is available 20 mg/mL. The drug reference says to administer the medication at 50 mg/min.

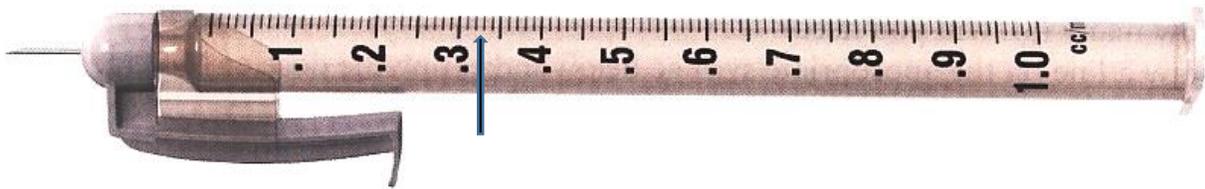
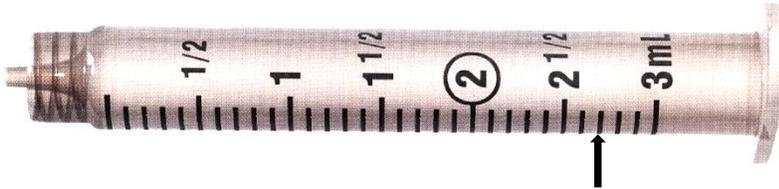
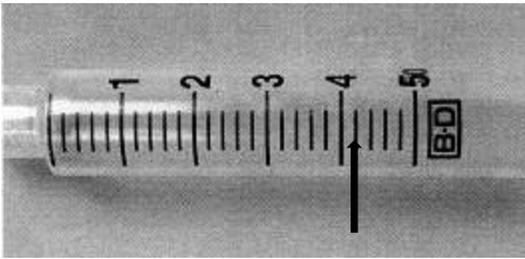
To administer this medication, the nurse will go to the room with a syringe containing _____ mL and give the med over _____ minutes at a rate of _____ mL/min.

Answer key:

- 1. a. 1500 mg
b. 90.9 kg
c. 300 mL
d. 100 mcg
e. 480 mL
- 2. 3 tabs
- 3. 2.5 mL
- 4. 0.5 mL (remember to always put a zero in front of dosages less than 1)
- 5. 0.75 mL
- 6. 10 mL
- 7.



Regular Reg + NPH



8. 1 mL (never add trailing zeros)
9. 3 mL
10. 125 mL/hr
11. 83 mcgtt/min (83 gtt/min)
12. 133 mL/hr
13. 10 hr
14. 1500 hrs
15. 0.68 mL
16. Dosage range calculated = 528 – 1056 mg/day; provider order = 375 mg/day so provider order is too low
17. 7.4 mL/hr (if instructed to round to nearest whole number the answer = 7)
18. 160 mg/hr
19. 2 mL over 2 minutes = 1 mL/min
20. 5 mL over 2 minutes = 2.5 mL/min