

Dosage Calculation Competency
Level II
Practice Sheet

STUDENT NAME: _____ **DATE:** ____ / ____ / ____

STUDENT I.D. #: _____ **ADVISOR:** _____

A 95% must be achieved on the competency exam to progress in the Nursing Program. Retesting cannot occur the same day as the failed exam. Each exam may be repeated once within the testing period unless there are no more published dates available. Testing process must be completed within specified testing dates. Failure to pass competency exam will result in following the remediation process as outlined in the student handbook.

Student will be allowed one hour to complete this competency.

If the student leaves during testing the exam will be collected and graded at that point whether completed or not.

A student photo ID is required to take the Dosage Calculation Competency Exam.

Only simple four function calculators are allowed for testing. Students may not share calculators.

DIRECTIONS:

Place all personal items in designated area.

Silence all cell phones.

Calculate the correct dosage and show your work on the exam.

- **Failure to label answers will result in missing the problem.**
- **Failure to show work will result in missing the problem.**
- All metric weights should be rounded to the nearest hundredth.
- Rounding should only be done at the last step in the problem.
- Round tablets/capsules to the nearest whole or half tablet (if scored).
- Liquid volumes greater than 1 mL/cc should be rounded to the nearest tenth. If volumes are less than 1 mL/cc, round to the nearest hundredth.
- Drip Rates - Calculate drip rates to the tenths place and round off to the nearest whole number
- IV pump drip rates – Calculate to the hundredths place and round to the tenths place.

Once exam is complete submit to faculty in room and proceed to designated waiting area to receive notification of score.

THERE ARE 20 QUESTIONS TO THIS TEST.

DO NOT OPEN THIS TEST OR BEGIN UNTIL DIRECTED TO START

For additional practice problems see:

Curren, A.M. (2010). *Dimensional Analysis for Meds* (4th ed). New York; Delmar.

COX COLLEGE
Springfield, Missouri
Dosage Calculation Competency
Math Review—Level II

Equivalents:

- 1 kilogram (kg) = 1000 Grams (GM)
- 1 Gram (g) = 1000 milligrams (mg)
- 1 mg = 1000 micrograms (mcg)
- 1 Liter (L) = 1000 milliliters (mL)
- 1 mL = 1 cubic centimeter (cc)
- 30 mL = 1 ounce (oz)
- 65 mg = 1 grain (gr)
- 2.2 pounds (lb) = 1 kilogram (KG)

1. 10 gr = _____ mg
2. 60 ml = _____ oz
3. 2 tsp = _____ ml
4. 140 lb = _____ KG
5. 0.001 mg = _____ mcg
6. 260 mg = _____ gr
7. 4 oz = _____ ml
8. 3 L = _____ ml
9. 0.2 mg = _____ mcg
10. 1591 GM= _____ lb = ____ lb ____ oz
11. 3069 GM= _____ lb = ____ lb ____ oz
12. 0.5 gr= _____ mcg
13. $\frac{3}{4}$ oz = _____ ml
14. $\frac{1}{100}$ gr= _____ mg
15. 4 lb 4 oz = _____ GM
16. 5.3 lb = _____ KG

COX COLLEGE
Springfield, Missouri
Dosage Calculation Competency
Sample Test—Level II

1. KCl 10 mEq po is ordered for the client, referring to the information on the label, how much should be given?

Give _____



2. Aricept 0.01 GM po is ordered at hs. Using the label, what should the nurse administer?

Give _____

Store at controlled room temperature 59° to 86°F (15° to 30°C). Dispense in tight containers (USP).

DOSAGE AND USE
See accompanying prescribing information. Each tablet contains 5 mg donepezil hydrochloride.

NDC 62856-245-30

Aricept[®] (5)

(donepezil HCl) tablets

5 mg
30 Tablets

Manufactured and Marketed by
Eisai Inc.
 Teaneck, NJ 07666

Distributed and Marketed by
Roerig
 Division of Pfizer Inc, NY, NY 10017

3. The Physician orders 4 mg/KG for K. C. who weighs 42 lbs. How many mg will you give? _____

4. J. M. (weight 165 lbs.) is to receive epogen 50 units/KG. Pharmacy sends 4000 units/ml. How many ml will you give? _____

5. C. Y., 18 months old is admitted for dehydration. The physician order D5 ½ NS 500 ml over 8 hours. The tubing is 15 gtt/ml. What will be your drip rate?

6. Heparin 4000 units SQ is ordered. Your vial contains 5 ml of Heparin labeled 10,000 units/ml. Give _____

7. Lanoxin 0.25 mg IM daily. Your ampule is labeled 0.5 mg/2ml. Give _____

8. R. G. (195 lbs) is to receive 4mg/KG/day in divided doses q8h. How many mg will he receive q8h? _____

9 IV D5W continuously at 50 ml/hr. Your drip factor is 60. Set drip rate at _____

10. IV Normal Saline at 200 ml/hr. Your drip factor is 15. Set drip rate at _____

11. Your client needs 100 ml infused in 30 minutes. What rate would you set the IV pump to? _____

12. Digoxin 0.5 mg po daily. You have scored tablets of 0.25 mg. Give _____

13. An infant weights 1600 GM. What is it's weight in pounds and oz?

14. Valium 6 mg IV q6h prn agitation. Valium comes in a vial labeled 10 mg/2 ml. Give _____

15. Atropine sulfate 0.6 mg IM now. You have available a vial labeled 0.4 mg/ml. Give _____

16. You are to infuse 600 ml of solution over 2 hours. Your tubing has a drop factor of 15. What will your gtt/min be? _____

17. Rocephin 750 mg IM daily. Your reconstituted solution contains 1 GM in 4 ml. Give _____

18. The heparin drip is mixed 25,000 units in 250 ml NS. You are to deliver 700 units per hour. How many ml will deliver 700 units? _____

19. Solu Cortef 0.2 GM IM now. You have Solu Cortef 250 mg/2ml available. Give _____.

20. Dilantin 60 mg po q12h is ordered for a child weighing 14 KG. The recommended safe dose for a child is 8 to 10 mg/KG/day. You have Dilantin scored 30 mg chewable tablets.

What is the safe dose range in 24 hours? _____

What is the safe amount per dose? _____

Is the ordered dose safe? _____

How many tablets would you give? _____

21. You are to give 1500 units of Epogen. Epogen comes 4000 units per ml. Which type of syringe will you use?

- a. 3ml Syringe
- b. Insulin Syringe
- c. TB syringe

COX COLLEGE
Springfield, Missouri
Dosage Calculation Competency
Sample Test—Level II
Answer Sheet

Equivalents:

1. 10 gr = 650 mg

2. 60 ml = 2 oz

3. 2 tsp = 10 ml

4. 140 lb = 63.64 KG

5. 0.001 mg = 1 mcg

6. 260 mg = 4 gr

7. 4 oz = 120 ml

8. 3 L = 3000 ml

9. 0.2 mg = 200 mcg

10. 1591 GM = 3.5 lb = 3 lb 8 oz

11. 3069 GM = 6.75 lb = 6 lb 12 oz

12. 0.5 gr = 32,500 mcg

13. $\frac{3}{4}$ oz = 22.5 ml

14. 1/100 gr = 0.65 mg

15. 4 lb 4 oz = 1931.82 GM

16. 5.3 lb = 2.41 KG

COX COLLEGE
Springfield, Missouri
Dosage Calculation Competency
Sample Test—Level Two
Answer Sheet

1. 7.5 ml
2. 2 tablets
3. 76.36 mg
4. 0.94 ml
5. 16 gtts/min
6. 0.4ml
7. 1 ml
8. 118.19 mg
9. 50 gtt/min
10. 50 gtt/min
11. 200ml/hr
12. 2 tablets
13. 3 lb 8 oz
14. 1.2 ml
15. 1.5 ml
16. 75 gtt/min
17. 3 ml
18. 7 ml
19. 1.6 ml
20. 112-140 mg per 24 hours; 56-70 mg per dose; yes; 2 tablets
21. c) TB syringe

Dosage Comp Level II Practice worksheet
Keys worked in Dimensional Analysis

- #1. 7.5 mL

Wanted mL	Conversion 15mL	Have 10mEq 20 mEq	15x10 20	Answer 7.5
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- #2. 2 tablets

Wanted Capsules	Dose on hand 1 tablet	Conversion 1000 mg 5 mg	Order 0.01 gm 1 gm	1x1000x0.01 5x1	Answer 2
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- #3. 76.36 mg

Wanted mg	Order 4mg	Conversion 1 kg 1kg	weight 42 # 2.2#	4x1x42 1x2.2	Answer 76.3636
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- #4. 0.94 mL

Conversion 1 kg 2.2 #	weight 165 #	Answer 75 kg	
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Wanted mL	Have on Hand 1 mL 4000 units	Order 50 units 1 kg	Conversion weight 75 kg	1x50x1x75 4000x1x1	Answer 0.9375
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- #5. 16 drops per minute

Flow rate gtt	Drip factor 15 gtt	Order 500 mL	Conversion 1 hr	15x500x1	Answer 15.625
min	1 mL	8 Hr	60 min	1x8x60	
- #6. .04 mL

Wanted mL	Dose on hand 1 mL 10,000 units	Order 4,000 units	1x4,000 10,000	Answer 0.4
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- #7. 1 mL

Wanted mL	Have on hand 2 mL 0.5mg	Order 0.25 mg	2x0.25 0.5	Answer 1
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- #8. 118.19 mg

weight 195 # 1	Conversion 1 kg 2.2 lbs	Answer 88.64 kg	
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Wanted Mg	Order 4mg 1kg	Conversion weight 88.64 kg 1	Conversion 1 day 24 hours	Dose frequency 8 hours	4x88.64x1x8 1x1x24	Answer 118.19
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#9. 50 drops per minute

Flow rate gtt	Drip factor 60 gtt	Order 50 mL	Conversion 1 hr	60x50x1	Answer 50
min	1 mL	1 Hr	60 min	1x1x60	

#10 50 drops per minute

Flow rate gtt	Drip factor 15 gtt	Order 200 mL	Conversion 1 hr	15x200x1	Answer 50
min	1 mL	1 Hr	60 min	1x1x60	

#11 200 mL/hr

Wanted mL	Dose on hand 100 mL	Order 60 min	100x60	Answer 200
hr	30 min	1 hr	30x1	

#12. 2 tablets

Wanted Tablets	Dose on hand 1 tablet	Order 0.5 mg	1x0.5	Answer 2
	0.25 mg		0.25	

#13. 3 pounds 8 ounces

Wanted pounds	Conversion 2.2pound	conversion 1 kg	Have 1600 grams	2.2x1600	Answer 3.52 pounds
	1 kg	1000 mg		1000	

Second Step Convert pound decimal to ounce

Wanted oz	Conversion 16 oz	Have 0.52 pound	16x0.52	Answer 8.32 ounces
	1 pound		1	

#14. 1.2 mL

Wanted mL	Have on hand 2 mL	Order 6 mg	2x6	Answer 1.2
	10 mg		10	

#15 1.5 mL.

Wanted mL	Have on hand 1 mL	Order 0.6 mg	1x0.6	Answer 1.5
	0.4 mg		0.4	

#16 75gtt/min

Flow rate gtt	Drip factor 15gtt	Order 600 mL	Conversion 1 hr	15x600x1	Answer 75
Min	1 mL	2 hour	60 min	1x2x60	

#17. 3 mL

Wanted mL	Have on hand 4 mL	Conversion 1 gm	Order 750 mg	4x1x750	Answer 3 mL
	1 gm	1000 mg		1x1000	

#18. 7 mL

Wanted mL	Have on hand 250 mL	Order 700 units	$\frac{250 \times 700}{25000}$	Answer 7
	25000 units			

#19. 1.6 mL

Wanted mL	Have on hand 2 mL	Conversion 1000 mg	Order 0.2 gm	$\frac{2 \times 1000 \times 0.2}{250 \times 1}$	Answer 1.6
	250 mg	1 gm			

20. 112-140 mg per 24 hour period, 56-70 mg/dose, yes; 2 tablets

8 mg/kg/day calculation

Wanted Mg	Order 8mg	weight 14 kg	8×14	Answer 112
	1kg			

10 mg/kg/day

Wanted Mg	Order 10mg	weight 14 kg	10×14	Answer 140
	1kg			

Per dose 8 mg/kg/day calculation

Wanted Mg	Order 8mg	weight 14 kg	Conversion 1 day 24 hours	Dose frequency 12 hours	$\frac{8 \times 14 \times 1 \times 12}{1 \times 24}$	Answer 56
	1kg					

Per dose 10 mg/kg/day

Wanted Mg	Order 10mg	weight 14 kg	Conversion 1 day 24 hours	Dose frequency 12 hours	$\frac{10 \times 14 \times 1 \times 12}{1 \times 24}$	Answer 70
	1kg					

2 tablets

Wanted tablets	Dose on hand 1 tablet	Order 60 mg	$\frac{1 \times 60}{30}$	Answer 2
	30 mg			

21 TB syringe – amount is < 1mL so want a syringe to measure in 10th

Wanted mL	Have on hand 1 mL	Order 1500 units	$\frac{1 \times 1500}{4000}$	Answer 0.38
	4000 units			