

**Dosage Calculation Competency**

**Level 1  
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* (4<sup>th</sup> ed). New York; Delmar.

**COX COLLEGE  
Springfield, Missouri**

**Dosage Calculation Competency  
Math Review—Level One**

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)

Round the following to the nearest hundredth.

- 1. 68.1883 = \_\_\_\_\_
- 2. 0.012 = \_\_\_\_\_
- 3. 3.655 = \_\_\_\_\_
- 4. 2.1709 = \_\_\_\_\_
- 5. 4.209 = \_\_\_\_\_
- 6. 0.0006 = \_\_\_\_\_
- 7. 3.2 = \_\_\_\_\_
- 8. 0.096 = \_\_\_\_\_
- 9. 0.995 = \_\_\_\_\_
- 10. 19.999 = \_\_\_\_\_

24 hour clock conversion:

- 1. 1815 on the 24-hour clock is the same as \_\_\_\_\_ in the 12 hour time.
- 2. On the 24-hour clock 3:05 pm is the same as \_\_\_\_\_.

**COX COLLEGE**  
Springfield, Missouri

**Dosage Calculation Competency  
Practice Test—Level One**

1. 300 mg = \_\_\_\_\_ GM

2. 3825 g = \_\_\_\_\_ lb.

3. 255 mg = \_\_\_\_\_ GM

4. 650 mg = \_\_\_\_\_ gr

5. 140 lb = \_\_\_\_\_ KG

6. 3 L = \_\_\_\_\_ mL

7. 1400 g = \_\_\_\_\_ lbs

8. 10 gr = \_\_\_\_\_ mcg

9. 4 oz = \_\_\_\_\_ mL

10. 240 mg = \_\_\_\_\_ gr.

11. The physician has ordered 100 mg Demerol po now. Read the label and determine how many tablets to administer. \_\_\_\_\_



12. Synthroid 0.1 mg p.o. daily. You have Synthroid in 50 mcg tablets. Give \_\_\_\_\_

13. Tetracycline syrup 250 mg p.o. q.i.d. You have tetracycline syrup 2000 mg in 60 mL.

How many mL's will you give? \_\_\_\_\_

14. The physician orders: Potassium Chloride 10 mEq p.o now. Read the label and determine how much to give. \_\_\_\_\_



15. Polymox suspension 150 mg tid. You have Polymox oral suspension 125 mg/5 mL in an 80 mL bottle. Give \_\_\_\_\_

16. Sodium Salicylate gr 2 rectally every 4 hours. You have 130 mg suppository. Give \_\_\_\_\_

17. Demerol 40 mg IM q 3 hrs. for pain. The drug is available in an ampule containing 50 mg/mL. Give \_\_\_\_\_

18. A newborn infant weights 3200 g. The mother wants to know the baby's weight in pounds. Answer \_\_\_\_\_

19. Bronkodyl elixir 0.05 g po q 6 hrs must be given using the solution containing 80 mg per 15 mL. Give \_\_\_\_\_

## ANSWER SHEET – LEVEL I PRACTICE TEST

### Rounding to the hundredth.

1. 68.19
2. 0.01
3. 3.66
4. 2.17
5. 4.21
6. 0
7. 3.2
8. 0.1
9. 1
10. 20

### 24 hour clock Conversion

1. 6:15 PM
2. 1505

### Sample Exam

1. 0.3
2. 8.42
3. 0.26
4. 10
5. 63.64
6. 3000
7. 3.08
8. 650,000
9. 120
10. 3.69
11. 2 tablets
12. 2 tablets
13. 7.5 mL
14. 7.5 mL
15. 6 mL
16. 1 suppository
17. 0.8 mL
18. 7.04 lbs
19. 9.4 mL

Dosage Comp Level I Practice worksheet  
Keys worked in Dimensional Analysis

- #1. **0.3 GM**
- |  |              |                               |                     |                 |               |
|--|--------------|-------------------------------|---------------------|-----------------|---------------|
|  | Wanted<br>GM | Conversion<br>1 GM<br>1000 mg | Have<br>300 mg<br>1 | 1x300<br>1000x1 | Answer<br>0.3 |
|--|--------------|-------------------------------|---------------------|-----------------|---------------|
- #2. **8.42 lbs**
- |  |                  |                             |                              |                       |                        |                |
|--|------------------|-----------------------------|------------------------------|-----------------------|------------------------|----------------|
|  | Wanted<br>pounds | Conversion<br>2.2 #<br>1 KG | Conversion<br>1 KG<br>1000 g | weight<br>3825 g<br>1 | 2.2x1x3825<br>1x1000x1 | Answer<br>8.42 |
|--|------------------|-----------------------------|------------------------------|-----------------------|------------------------|----------------|
- #3. **0.26 GM**
- |  |        |                               |                     |                 |                |
|--|--------|-------------------------------|---------------------|-----------------|----------------|
|  | Wanted | Conversion<br>1 GM<br>1000 mg | Have<br>255 mg<br>1 | 1x255<br>1000x1 | Answer<br>0.26 |
|--|--------|-------------------------------|---------------------|-----------------|----------------|
- #4. **10 gr**
- |  |              |                             |                     |               |                 |
|--|--------------|-----------------------------|---------------------|---------------|-----------------|
|  | Wanted<br>gr | Conversion<br>1 gr<br>65 mg | Have<br>650 mg<br>1 | 1x650<br>65x1 | Answer<br>10 gr |
|--|--------------|-----------------------------|---------------------|---------------|-----------------|
- #5. **63.64 KG**
- |  |              |                             |                    |                |                 |
|--|--------------|-----------------------------|--------------------|----------------|-----------------|
|  | Wanted<br>KG | Conversion<br>1 KG<br>2.2 # | Have<br>140 #<br>1 | 1x140<br>2.2x1 | Answer<br>63.64 |
|--|--------------|-----------------------------|--------------------|----------------|-----------------|
- #6. **3000 mL**
- |  |              |                              |                  |               |                |
|--|--------------|------------------------------|------------------|---------------|----------------|
|  | Wanted<br>mL | Conversion<br>1000 mL<br>1 L | Have<br>3 L<br>1 | 1000x3<br>1x1 | Answer<br>3000 |
|--|--------------|------------------------------|------------------|---------------|----------------|
- #7. **3.08 pounds**
- |  |               |                             |                             |                     |                        |                |
|--|---------------|-----------------------------|-----------------------------|---------------------|------------------------|----------------|
|  | Wanted<br>lbs | Conversion<br>2.2 #<br>1 KG | Conversion<br>1 KG<br>1000g | Have<br>1400 g<br>1 | 2.2x1x1400<br>1x1000x1 | Answer<br>3.08 |
|--|---------------|-----------------------------|-----------------------------|---------------------|------------------------|----------------|
- #8. **650,000 mcg**
- |  |               |                                |                             |                    |                     |                   |
|--|---------------|--------------------------------|-----------------------------|--------------------|---------------------|-------------------|
|  | Wanted<br>mcg | Conversion<br>1000 mcg<br>1 mg | Conversion<br>65 mg<br>1 gr | Have<br>10 gr<br>1 | 1000x65x10<br>1x1x1 | Answer<br>650,000 |
|--|---------------|--------------------------------|-----------------------------|--------------------|---------------------|-------------------|
- #9. **120 mL**
- |  |              |                             |                   |             |               |
|--|--------------|-----------------------------|-------------------|-------------|---------------|
|  | Wanted<br>mL | Conversion<br>30 mL<br>1 oz | Have<br>4 oz<br>1 | 30x4<br>1x1 | Answer<br>120 |
|--|--------------|-----------------------------|-------------------|-------------|---------------|

#10	<b>3.69 gr</b>	Wanted gr	Conversion 1 gr 65 mg	Have 240 mg 1	Order 1x240 65x1	Answer 3.69 gr
#11	<b>2 tablets</b>	Wanted tablets	Dose on hand 1 tablet 50 mg	Order 100 mg 1	Order 1x100 50x1	Answer 2
#12.	<b>2 tablets</b>	Wanted tablets	Dose on hand 1 tablet 50 mcg	Conversion 1000 mcg 1 mg	Order 0.1 mg 1	Answer 2 1x1000x0.1 50x1x1
#13.	<b>7.5 mL</b>	Wanted mL	Have on hand 60 mL 2000 mg	Order 250 mg 1	Order 60x250 2000x1	Answer 7.5
#14.	<b>7.5 mL</b>	Wanted mL	Have on hand 15 mL 20 mEq	Order 10 mEq 1	Order 15x10 20x1	Answer 7.5
#15.	<b>6 mL</b>	Wanted mL	Have on hand 5 mL 125 mg	Order 150 mg 1	Order 5x150 125x1	Answer 6
#16	<b>1 suppository</b>	Wanted suppository	Dose on hand 1 supp 130 mg	Conversion 65 mg 1 gr	Order 2 gr 1	Answer 1 1x65x2 130x1x1
#17.	<b>0.8 mL</b>	Wanted mL	Have on hand 1 mL 50 mg	Order 40 mg 1	Order 1x40 50x1	Answer 0.8
#18.	<b>7.04 lbs</b>	Wanted lbs	Conversion 2.2 lbs 1 KG	Conversion 1 KG 1000g	Have 3200 gm 1	Answer 7.04 2.2x1x3200 1x1000x1
#19.	<b>9.4 mL</b>	Wanted mL	Have on hand 15 mL 80 mg	Conversion 1000 mg 1 g	Order 0.05 g 1	Answer 9.375 15x1000x0.05 80x1x1