Nursing Dosage Calculation Practice Problems

Hints for Converting

1) **Memorize equivalents / conversions.**

2) Read carefully.

3) If the dose is based on weight, convert patient’s weight to correct unit if necessary, then find dose based on patient’s weight.

4) **Set up proportion** – Desired dose over the available dose

\[
\frac{\text{Desired Dose}}{\text{Available}} \quad \text{or} \quad \frac{D}{A}
\]

a) Label all terms with correct units.
b) Are you comparing like units?
   If not, convert to like units.

5) Estimate the answer.

6) Follow basic math principles to find value of unknown.

7) Label all answers with correct units.
   (Are you reporting the unit requested?)

8) Check all work, and think logically about the answer obtained.  *Does it make sense?*
### Sample Answers

<table>
<thead>
<tr>
<th></th>
<th>Desired Dose</th>
<th>Available Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td><strong>100,000 units</strong>&lt;br&gt;<strong>1,000,000 units</strong></td>
<td><strong>x cc</strong>&lt;br&gt;<strong>20 cc</strong></td>
</tr>
<tr>
<td></td>
<td>( \frac{100,000 \text{ units}}{1,000,000 \text{ units}} = \frac{x \text{ cc}}{20 \text{ cc}} )</td>
<td>( \frac{1}{10} = \frac{x}{20} )</td>
</tr>
</tbody>
</table>
|   | **20 = 10 x**<br>x = **2 cc** | **Desired Dose**<br>**Available Dose**
|   | **1) set up proportion** | **1) set up proportion** |
|   | **2) like units are being compared, therefore use basic math principles** | **2) like units are being compared, therefore use basic math principles** |
|   | **3) reduce the left side**<br>x = **2 cc** | **3) simplify the left side**<br>x = **1 tablet** |
|   | **4) cross multiply** | **4) tablet is the unknown unit and is also requested unit therefore stop.** |
|   | **5) cc is the unknown unit and is also requested unit therefore stop.** | **5)tablet is the unknown unit and is also requested unit therefore stop.** |

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<tr>
<td>2)</td>
<td>( \frac{0.35 \text{ mg}}{0.7 \text{ mg}} = \frac{n \text{ tablets}}{1 \text{ tablet}} )</td>
<td>n = <strong>0.5 tablets</strong> or <strong>1/2 tablets</strong></td>
</tr>
</tbody>
</table>
|   | \( \frac{0.35 \text{ mg}}{0.7 \text{ mg}} = \frac{n \text{ tablets}}{1 \text{ tablet}} \) | **Desired Dose**<br>**Available Dose**
|   | **1) set up proportion** | **1) set up proportion** |
|   | **2) like units are being compared, therefore use basic math principles** | **2) like units are being compared, therefore use basic math principles** |
|   | **3) simplify the left side**<br>n = **0.5 tablets** or **1/2 tablets** | **3) simplify the left side**<br>n = **0.5 tablets** or **1/2 tablets** |
|   | **4) tablet is the unknown unit and is also requested unit therefore stop.** | **4) tablet is the unknown unit and is also requested unit therefore stop.** |

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<th>Available Dose</th>
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<tr>
<td>6)</td>
<td>( \frac{22 \text{ lbs}}{2.2 \text{ lbs}} = \frac{n \text{ kg}}{1 \text{ kg}} )</td>
<td><strong>2) Measuring on left are not in same unit so change gr → mg</strong></td>
</tr>
<tr>
<td></td>
<td><strong>10 kg = x</strong>&lt;br&gt;x = <strong>gr \frac{10}{4}</strong> or <strong>gr 2 1/2</strong>&lt;br&gt;( \frac{10 \text{ kg}}{1 \text{ kg}} = \frac{x \text{ gr}}{\frac{1}{4} \text{ gr}} )</td>
<td><strong>10 kg = x</strong>&lt;br&gt;x = <strong>30 cc</strong></td>
</tr>
<tr>
<td></td>
<td><strong>1) Dose is based on \text{ kg} therefore convert patient’s weight in \text{ lbs} to \text{ kg.}</strong></td>
<td><strong>1) Dose is based on \text{ kg} therefore convert patient’s weight in \text{ lbs} to \text{ kg.}</strong></td>
</tr>
<tr>
<td></td>
<td><strong>2) Find dose to give 10 \text{ kg} patient; set up proportion and solve</strong></td>
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</tr>
<tr>
<td></td>
<td><strong>3) Patient needs 2½ \text{ grains}; set up D/A proportion</strong></td>
<td><strong>3) Patient needs 2½ \text{ grains}; set up D/A proportion</strong></td>
</tr>
<tr>
<td></td>
<td><strong>4) Measures on left are not in same unit so change gr → mg</strong></td>
<td><strong>4) Measures on left are not in same unit so change gr → mg</strong></td>
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<tr>
<td></td>
<td><strong>5) Rewrite and solve for x. Answer is in unit requested therefore stop.</strong></td>
<td><strong>5) Rewrite and solve for x. Answer is in unit requested therefore stop.</strong></td>
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Calculations Worksheet

1) ORDER: Drug A 100,000 units P.O.
AVAILABLE: Drug A 1,000,000 units per 20 cc
GIVE: ____________ cc

2) ORDER: Drug C 0.35 mg P.O.
AVAILABLE: Drug C tabs. 0.7 mg
GIVE: ____________ Tab (s)

3) ORDER: Drug D 60 mg P.O.
AVAILABLE: Drug D 15 mg per cc
GIVE: ____________ cc (s)

4) ORDER: Drug E 0.6 g P.O.
AVAILABLE: Drug E 400 mg in 2 cc
GIVE: ____________ cc

5) ORDER: Drug F 45 mg I.M.
AVAILABLE: Drug F 50 mg in 2 cc
GIVE: ____________ cc

6) ORDER: Drug G gr ¼ per kg body weight P.O.
AVAILABLE: Drug G 25 mg per 5 cc
BODY WEIGHT: 22 lbs.
GIVE: ____________ cc

7) The doctor orders 40 mg of Feldene per day. Feldene comes in 10 mg capsules. The patients should take the medication before breakfast and dinner. How many capsules should the patient take before each meal?

8) Drug A label reads 50 mg tablets. The doctor orders 75 mg three times a day. The nurse will administer ____________ tablets per day.

9) ORDER: Drug M 35 mg I.M.
AVAILABLE: Drug M 50 mg per cc
GIVE: ____________ cc
10) ORDER: Drug N 15 mg per kg body weight P.O.
AVAILABLE: Drug N 60 mg per cc
BODY WEIGHT: 220 lbs
GIVE: _____________ cc

11) The doctor prescribed Tagamet 400 milligrams orally. The Tagamet label reads Tagamet liquid 200 milligrams in 5 milliliters. How many teaspoons will be given?

12) ORDER: Drug Q 300,000 units I.M.
AVAILABLE: Drug Q 5,000,000 units in 25 cc
GIVE: _____________ cc

13) ORDER: Drug S 0.15 mg P.O.
AVAILABLE: Drug S 0.3 mg tablets
GIVE: ____________ Tab(s)

14) ORDER: Drug T 50 mg P.O.
AVAILABLE: Drug T 25 mg per 4 cc
GIVE: _____________ cc

15) ORDER: Drug U 0.4 g I.M.
AVAILABLE: Drug U 500 mg in 2 cc
GIVE: ____________ cc

16) Gantrisin 0.75 g (oral) is ordered. On hand is Gantrisin 250 mg tablets. How many tablets would you give the patient?

17) ORDER: Drug Y 85 mg I.M.
AVAILABLE: Drug Y 100 mg in 2 cc
GIVE: ______________ cc

18) ORDER: Drug Z 30 mg per kg body weight P.O.
AVAILABLE: Drug Z 15 mg per cc
BODY WEIGHT: 22 lbs
GIVE: _____________ cc
19) ORDER: Drug B 120 mg P.O. 
AVAILABLE: Drug B 60 mg per 15 cc 
GIVE: __________ ounce(s)

20) ORDER: Drug D 0.125 mg S.Q. 
AVAILABLE: Drug D 0.500 mg per 2 cc 
GIVE: __________ cc

21) DESIRED: 200,000 units 
AVAILABLE: 10,000,000 units per 25 cc 
GIVE: __________ cc

22) DESIRED: 60 mg 
AVAILABLE: 50 mg per 10 cc 
GIVE: __________ cc

23) DESIRED: 600 mg 
AVAILABLE: 1000 mg per 4 cc 
GIVE: __________ cc

24) The doctor orders 80 mg of liquid cough syrup. The cough syrup is labeled 100 mg in 5 ml. How many ml should the patient receive?

25) DESIRED: 15 mg per kg body weight 
AVAILABLE: 25 mg per 1 cc 
BODY WEIGHT: 5.5 lbs 
GIVE: __________ cc

26) DESIRED: 130 mg 
AVAILABLE: 200 mg per 2 cc 
GIVE: __________ cc

27) DESIRED: 750 mg 
AVAILABLE: 1 g per 2 cc 
GIVE: __________ cc
28) DESIRED: 10 mg
AVAILABLE: 15 mg per 1.5 cc
GIVE: __________ cc

29) DESIRED: 0.75 g
AVAILABLE: 25 mg per 5 cc
GIVE: __________ cc

30) DESIRED: 300 mg
AVAILABLE: 0.6 g per cc
GIVE: __________ cc

31) DESIRED: 5 mg
AVAILABLE: 0.5 mg per 10 cc
GIVE: __________ cc

32) DESIRED: 7.5 mg
AVAILABLE: 30 mg per cc
GIVE: __________ cc

33) DESIRED: 100 mg P.O.
AVAILABLE: 1 g in 10 cc
GIVE: __________ cc

34) DESIRED: 400 mg I.M.
AVAILABLE: 0.5 g per cc
GIVE: __________ cc

35) DESIRED: 0.125 mg S.Q.
AVAILABLE: 0.5 mg per 2 cc
GIVE: __________ cc

36) DESIRED: 125 mg per kg body weight
AVAILABLE: 0.25 g per cc
BODY WEIGHT: 22 lbs
GIVE: __________ cc
37) DESIRED: 450 mg P.O.  
AVAILABLE: 300 mg per tablet  
GIVE: ___________ tab(s)

38) DESIRED: 75 mg P.O.  
AVAILABLE: 15 mg per 2 cc  
GIVE: ___________ oz

39) The doctor ordered 400 mg of Ibuprofen every 6 hours. The label reads:  

*Ibuprofen tablets USP, 200 mg tablets*  

What should the nurse administer to the patient every 6 hours?

40) A client is ordered 37.5 milligrams of Dothiepin. 75 milligram tablets are available. How many tablets will you give?

**Answers**

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<tr>
<th>1) 2 cc</th>
<th>21) 0.5 cc</th>
</tr>
</thead>
<tbody>
<tr>
<td>2) 0.5 tab</td>
<td>22) 12 cc</td>
</tr>
<tr>
<td>3) 4 cc</td>
<td>23) 2.4 cc</td>
</tr>
<tr>
<td>4) 3 cc</td>
<td>24) 4 ml</td>
</tr>
<tr>
<td>5) 1.8 cc</td>
<td>25) 1.5 cc</td>
</tr>
<tr>
<td>6) 30 cc</td>
<td>26) 1.3 cc</td>
</tr>
<tr>
<td>7) 2 capsules</td>
<td>27) 1.5 cc</td>
</tr>
<tr>
<td>8) 4.5 tabs</td>
<td>28) 1 cc</td>
</tr>
<tr>
<td>9) 0.7 cc</td>
<td>29) 150 cc</td>
</tr>
<tr>
<td>10) 25 cc</td>
<td>30) 0.5 cc</td>
</tr>
<tr>
<td>11) 2 tabs</td>
<td>31) 100 cc</td>
</tr>
<tr>
<td>12) 1.5 cc</td>
<td>32) 0.25 cc</td>
</tr>
<tr>
<td>13) 0.5 tab</td>
<td>33) 1 cc</td>
</tr>
<tr>
<td>14) 8 cc</td>
<td>34) 0.8 cc</td>
</tr>
<tr>
<td>15) 1.6 cc</td>
<td>35) 0.5 cc</td>
</tr>
<tr>
<td>16) 3 tabs</td>
<td>36) 5 cc</td>
</tr>
<tr>
<td>17) 1.7 cc</td>
<td>37) 1.5 tabs</td>
</tr>
<tr>
<td>18) 20 cc</td>
<td>38) 0.33 oz</td>
</tr>
<tr>
<td>19) 1 oz</td>
<td>39) 2 tabs</td>
</tr>
<tr>
<td>20) 0.5 cc</td>
<td>40) 0.5 tabs</td>
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**Similar Problems**

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