

<b>MATH STRAND 1: Number and Operations</b>
<b>CLE: 1.3 Compute fluently and make reasonable estimates</b>
<b>Health Profession: Nursing</b>
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<b>Reference</b> <b>Kee, Joyce L., and Sally M. Marshall. <u>Clinical Calculations with Applications to General and Specialty Areas</u>. 5<sup>th</sup> ed. St Louis: Elsevier Saunders, 2004. 113-123</b>
<b>Objectives:</b> <b>At the completion of this presentation the high school student will be able to:</b> <ol style="list-style-type: none"> <li><b>1. State five reasons why it is important to calculate medication dosages correctly.</b></li> <li><b>2. Demonstrate their ability to calculate dosages appropriately.</b></li> <li><b>3. Identify the importance of this information to nursing.</b></li> </ol>
<b>Background Summary of Information as Related to X-ray Technologists and CLE:</b>  <b>Nurses pass medication to patients on a daily basis. If the nurse makes an error in calculating how much of a medication to give, the patient can have problems. These can range anywhere from not being enough to work to so much that it causes life threatening problems.</b>
<b>Scenario:</b>  <b>You are a nurse caring for Mr. Smith. He has come in for an infection. You receive an order for Dynapen 100 mg po (by mouth). Dynapen is an antibiotic to help get rid of his infection. This drug is available in 62.5 mg/5ml. How many ml do you draw up to give to Mr. Smith?</b>
<b>Activities</b>  <b>Students will have a worksheet with practice math problems to practice doing calculations with.</b>  <b>Worksheet</b> <ol style="list-style-type: none"> <li><b>1. Patient J.S. is a 14 year old male who has asthma and is getting Solu-Medrol to treat it. This medication comes in 20 mg/1 ml, the amount you are supposed to give the patient is 50 mg. How many ml do you give?</b></li> <li><b>2. Patient A.B. has arthritis and is to take 250 mg Ibuprofen. The medication comes in 100mg tablets. How many tablets do you give?</b></li> <li><b>3. Your patient has just returned from surgery with an order for oxycodone 50 mg. This medication comes in 5mg/5ml of liquid. How many ml do you give?</b></li> </ol>

4. Your patient has seizures and has gabapentin ordered at 40mg/kg/day. The patient weighs 30 kg. How many mg do you give per day?

5. Your patient is at risk for developing blood clots in his legs so the doctor orders Lovenox 30 mg. Lovenox comes in 100mg/1ml. How many ml do you give?

**Answers**

1.  $1\text{ml}/20\text{mg} \times 50\text{ mg}/x = (1 \times 50 / 20)$  2.5ml
2.  $1\text{tab}/100\text{mg} \times 250\text{mg}/x = (1 \times 250 / 100)$  2.5 tablets
3.  $5\text{ml}/5\text{mg} \times 50\text{mg}/x = (5 \times 50 / 5)$  50ml
4.  $40\text{mg} \times 30\text{ kg}/\text{day} = 1200\text{ mg}$
5.  $1\text{ml}/100\text{mg} \times 30\text{mg}/x = (1 \times 30 / 100)$  0.3ml