PassAssured's Pharmacy Calculation Workbook

Calculations Sub-Section 3: Roman Numerals

1. Convert the following Roman Numerals to Arabic Numerals:
   a) V=___
   b) X=___
   c) L=___
   d) C=___
   e) D=___
   f) M=___
   g) XX=___
   h) CII=___
   i) LVI=___
   j) VIII=___
   k) IV=___
   l) XXIX=___

2. Convert the following Arabic Numerals to Roman Numerals:
   a) 9=___
   b) 202=___
   c) 12=___
   d) 93=___
   e) 492=___
   f) 64=___
   g) 49=___
   h) 4=___
   i) 443=___
   j) 36=___
   k) 96=___
   l) 55=___

Calculations Sub-Section 4: Fractions, Decimals & Percent

1. Solve the following problems
   a) 2/4 +1/3=_____
   b) 1/6+1/8=_____
   c) 3/4 +1/8= _____
   d) 7/8-5/24=_____
   e) 3/4-1/7=_____
   f) 1/2-1/3=_____
   g) 4/5÷1/3=_____
   h) 3/8÷5/16=_____
   i) 3/7x8/27=_____

2. Solve the following problems
   a) 2.008+1.23+0.794=_____
   b) 0.625+0.50= _____
   c) 480x1/8=_____
   d) 15.432+437.5+4.55=_____

Calculations Sub-Section 5: Temperature Conversions

1. Convert the following degrees centigrade to degrees Fahrenheit
   a) 40 ° C=
   b) -4° C=
   c) 250°C=
   d) 128°C=
   e) 64°C=

2. Convert the following degrees Fahrenheit to degrees centigrade Fahrenheit
   a) 40°F=
   b) 150°F=
   c) -10°F=
   d) -31°F=
   e) 450°F

Calculations Sub-Section 6: Ratios & Proportions

1. How many ounces are in 240 ml?
2. How many ml are in 2 ounces?
3. How many pints are in 10 gallons?
4. How many 4 oz bottles can you fill from 2 pints of Benadryl?
5. How many 250 mg Azithromycin tabs will it take to make a 2 GM dose?
6. How many 500mg capsules can be compounded from 20 GM of Cephalexin?
7. How many 8 oz bottles can be filled from 1 gallon of denatured Alcohol?
8. How many 5 cc doses are contained in a 6 oz bottle?
9. How many 250mg capsules can be compounded from 10 GM of Tetracycline?
10. How many 500mg capsules of Amoxicillin will it take for a 2 GM loading dose?

Calculations Sub-Section 7: Quantities, Dilutions & Concentrations

1. The technician is asked to make 8 oz. of a 50% solution of Isopropyl Alcohol (IPA) • Ingredients available: Isopropyl Alcohol 70% and water • How many milliliters of IPA will you need?

2. You have 5 ml of Gentamicin Ophthalmic Solution 0.3%. You dilute it with 2 ml of sterile normal saline. What is the percent of Gentamicin in the final solution?

3. You have an IM injection of Rocephin 2 Gm per 10 ml vial. You put 1 ml in an empty vial and dilute with 3.3 ml of Lidocaine HCI 2% for injection. What is the final concentration of Rocephin in mg/ml?

4. How many GM of calamine are needed to make 120 GM of ointment containing 8% Calamine?

5. How many Gm of zinc is needed to prepare 240 GM of ointment containing 35% zinc?

6. Calculate the number of grams of salicylic acid needed to prepare 120 Gm. Of ointment containing 2% salicylic acid.

7. How many Gm. Of ichthammol should be added to 48 Gm of ointment base to make an ointment containing 20% ichthammol?

8. If 153 Gm of sucrose is dissolved in enough water to make an 85% syrup, how many ml of syrup are made?

9. How many Gm of boric acid should be used to prepare one liter of a solution containing 4.5% boric acid?

10. Calculate the number of milliliters of 0.2% peppermint water that can be prepared from 3.784 ml of peppermint.

Calculations Sub-Section 8: Doses & Dose Regimens

1. Three ounces of cough syrup is prescribed. How many 1 teaspoonful doses (5 ml) are contained in the prescription?
2. A patient is to take a laxative 4 teaspoonful twice daily for 3 days. How many ml should be dispensed?
3. A prescription is for 180 ml of a vitamin. How many 2 teaspoonful doses are contained in the prescription?
4. A prescription for a child is as follows: Cefaclor 25mg/kg/day in 2 divided doses: Give for ten days. If the child weighs 88 pounds how many 500 mg caps should be dispensed?
5. Albuterol Inhaler 17 g: Use two puffs TID. The product insert states that each Albuterol canister contains 200 inhalations. What is the day supply?
6. The Technician receives the following prescription: Cephalexin Susp. 250mg/5ml: Take 1 tsp TID for two weeks. How many milliliters should be dispensed?
7. The Technician receives the following prescription: Gabapentin (Neurontin) 300MG tabs. Sig: 300 mg orally on day one, 300 mg orally 2 times day on day two, then 300 mg orally 3 times a day on day three, then 300mg 4 times for 10 days. How many tablets should be dispensed?
8. The Technician receives the following prescription: Duragesic patch (fentanyl) 75mcg/hr. Disp a 30-day supply. How many patches should be dispensed?
9. The Technician receives the following prescription: Cefaclor (Ceclor®) 250mg. Sig: 1 capsule tid x 10 days. How many capsules should be dispensed?
10. A prescription is written for Benadryl (diphenhydramine) liquid. Sig. 2 teaspoonfuls tid for 7 days. How many cc should be dispensed?

Calculations Sub-Section 9: Calculation of IV Flow Rates

1. Mrs. Smith is to receive 1000cc NS over 8 hours. The administration set delivers 60 drops/ml. What is the flow rate in ml/hr?
2. In problem #1 what is the flow rate in drops/min?
3. A 3-year-old is to be given an intravenous antibiotic 150 cc over 30 minutes. The administration set delivers 20 drops/ml. What is the flow rate in ml/min?
4. In problem #3 what is the flow rate in drops/min?
5. A patient is to receive Demerol in D5W 500 cc to infuse slow IV drip over 2 hours. The administration set delivers 50 drops/ml. What is the flow rate in ml/min?
6. In problem #5 what is the flow rate in drops/min?

Calculations Sub-Section 10: Powder Volume

1. A 150 ml bottle of Amoxicillin 250 mg/5ml for oral suspension requires the addition of only 88 ml of Purified Water to give a 150 ml of suspension. What is the powder volume?
2. Calculate the number of ml of purified water which must be added to the bottle from problem 1 to give a dose of 400mg/5cc.
3. Cephalexin 125 mg per 5 mL (200 mL when mixed): Prepare suspension at time of dispensing. Add to the bottle a total of 140 mL of water. What is the powder volume?
4. Calculate the number of ml of purified water which must be added to the bottle from problem 3 to give a dose of 175 mg/5cc.
5. Cephalexin 125 mg per 5 mL (200 mL when mixed): How many ml would you need to give for a 175mg dose?
6. Amoxicillin 250 mg/5ml (150 ml suspension). How many ml would give a 400mg dose?
7. Cefaclor 250 mg/5 mL (150ml suspension). How many ml will give a 300mg dose?
8. E.E.S. 200 Liquid: 200mg/5cc. How many ml must be given to have a 250mg dose?
9. Clarithromycin (Biaxin®) 250mg/5ml. How many ml must be given for a 150mg dose?
10. Clarithromycin (Biaxin®)250mg/5ml. How many ml must be given to have a 300mg dose?

Answer Sheet

Calculations Sub-Section 3: Roman Numerals

1.
   a) 5
   b) 10
   c) 50
   d) 100
   e) 500
   f) 1000
   g) 20
   h) 102
   i) 56
   j) 8
   k) 4
   l) 29

2.
   a) IX
   b) CCII
   c) XII
   d) XCIII
   e) CDXCII
   f) LXIV
   g) XLIX
   h) IV
   i) CDXLIII
   j) XXXVI
   k) XCVI
   l) LV

Calculations Sub-Section 4: Fractions, Decimals & Percent

1.
   a) 5/6
   b) 7/24
   c) 7/8
   d) 2/3
   e) 17/28
   f) 1/6
   g) 2 2/5
   h) 1 1/5
   i) 8/63

2.
   a) 4.032
   b) 1.125
   c) 60
   d) 457.482

Calculations Sub-Section 5: Temperature Conversions

1. Centigrade to Fahrenheit
   a) 104°F
   b) 24.8°F
   c) 482°F
   d) 262.4°F
   e) 147.2°F

2. Fahrenheit to centigrade
   a) 4.44°C
   b) 65.5°C
   c) -23.3°C
   d) -35°C
   e) 232.2°C

Calculations Sub-Section 6: Ratios & Proportions

1. 8 oz
2. 60 ml
3. 80 pints
4. 8 bottles
5. 8 tabs
6. 40 caps
7. 16 bottles
8. 36 doses
9. 40 caps
10. 4 caps

Calculations Sub-Section 7: Quantities, Dilutions & Concentrations

1. 171 ml
2. 0.2%
3. 46.51 mg/ml
4. 9.6 Gm
5. 84 Gm
6. 2.4Gm
7. 9.6 Gm
8. 180 ml
9. 45Gm
10. 1,892 ml

Calculations Sub-Section 8: Doses & Dose Regimens

1. 18 doses
2. 120 ml
3. 18 doses
4. 20 doses
5. 33 days
6. 210 ml
7. 46 tabs
8. 10 patches
9. 30 caps
10. 210 cc

Calculations Sub-Section 9: Calculation of IV Flow Rates

1. 125/ml
2. 125 drops/min
3. 5ml/min
4. 100 drops/min
5. 4ml/min
6. 200 drops/min

Calculations Sub-Section 10: Powder Volume

1. 62ml
2. 32 ml
3. 60ml
4. 83ml
5. 7ml
6. 8ml
7. 6ml
8. 6.25ml
9. 3ml
10. 6ml