

## Medication Calculation Practice Problems

### Dosage Calculation

1. The order is for 60 mg of furosemide (Lasix) po daily. Available to the nurse is Lasix 40 mg/tablet. The nurse would administer how many tablets?
2. The order reads for digoxin 0.5 mg po. Available to the nurse is digoxin 0.25 mg/tablet. The nurse would administer how many tablets?
3. The order is for Bactrim 0.5 grams po. Available to the nurse is Bactrim 250 mg/tablet. The nurse would administer how many tablets?
4. The physician's order is for levothyroxine (Synthroid) 1000 mcg to treat the client's hypothyroidism. Available to the nurse is Synthroid 1 mg per tablet. The nurse would administer how many tablets?
5. The physician orders phenytoin (Dilantin) 150 mg po tid. Available to the nurse is phenytoin (Dilantin) 125 mg/4 ml. The nurse would administer how many ml's per dose?
6. The order is for morphine sulfate 3 mg subcutaneous every 4 hours prn. Available to the nurse is morphine sulfate 10 mg per ml. The nurse would administer how many ml's?
7. The order is for lactulose 20 g via the ng tube bid. Available to the nurse is lactulose 10 g/15 ml. The nurse would administer how many ounces?
8. The physician orders glycopyrolate (Robinul) 150 mcg IM stat. Available to the nurse is Robinul 0.2 mg/ml. The nurse will administer how many ml's?
9. The order is for Bumex 4 mg IVP stat. A vial of 20 ml labeled Bumex 1 mg per 0.5 ml. The nurse would administer how many ml's?
10. The physician's order is for nitroglycerine 200 micrograms IV stat. Available to the nurse is a vial of nitroglycerine labeled 0.8mg/ml. The nurse would administer how many ml's?

### Dosage Calculation involving body weight

11. The physician's order is for filgrastim (Neupogen) 0.3 mg/kg. The client weighs 110 pounds. Available to the nurse is Neupogen 50 mg per 3 ml. The nurse would administer how many ml's?
12. The order is for Epogen 300 units/kg subcutaneously today. The client weighs 150 pounds. Available to the nurse is Epogen 20,000 units/ml. The nurse would administer how many ml's?

13. Synthroid 1 mcg/ kg IVP is ordered for the client who weighs 165 lbs. Available to the nurse is Synthroid 0.1 mg/ml. The nurse will administer how many ml's?
14. Lovenox 1 unit/kg subcutaneously bid is ordered for the client at a risk for a DVT. The client weighs 132 pounds. Available to the nurse is Lovenox 50 units/ml. The nurse would administer how many ml's?
15. Digoxin 2 mcg/ kg IVP is ordered for the client who weighs 165 lbs. Available to the nurse is digoxin 0.1 mg/ml. The nurse will administer how many ml's?

### **Insulin**

16. The diabetic client's order is for 16 units of NPH insulin subcutaneously every morning and Regular insulin according to the following sliding scale:
 

|           |                |
|-----------|----------------|
| 151 - 200 | 2 units        |
| 201 - 250 | 4 units        |
| 251 - 300 | 6 units        |
| 301 - 350 | 8 units        |
| 351 - 400 | 10 units       |
| >400      | Call physician |

 The client's blood sugar is 236. The nurse would administer a total of how many units of insulin?
17. The diabetic client's order is for 13 units of NPH insulin subcutaneously every morning and Regular insulin according to the following sliding scale:
 

|           |                |
|-----------|----------------|
| 151 - 200 | 2 units        |
| 201 - 250 | 4 units        |
| 251 - 300 | 6 units        |
| 301 - 350 | 8 units        |
| 351 - 400 | 10 units       |
| >400      | Call physician |

 The client's blood sugar is 236. The nurse would administer a total of how many units of insulin?
18. The diabetic client is to receive 12 units of NPH at 1600 hours and regular insulin according to the following sliding scale:
 

|           |                    |
|-----------|--------------------|
| 201 - 250 | 2 units            |
| 251 - 300 | 4 units            |
| 301 - 350 | 6 units            |
| 351 - 400 | 8 units            |
| >400      | call the physician |

 The 1600 blood sugar is 196. The nurse would administer a total of how many units of insulin?

**IV Infusion**

19. The IV order is for 1000 ml D5NS every 8 hours. How many ml/hour will the client receive?
20. The IV order is for 1000 ml D5/NS at 83 ml/hour. How long will it take the IV to infuse?
21. The IV order is for 1000 ml D5W every 12 hours. The IV bag is hung at 1030 hours. At what time should the IV be completed?
22. The physician's order is for 3000 ml of D45 NaCl every 24 hour. The IV tubing delivers 10 gtts/ml. How many ml/hr will the client receive?

**IV drop rate**

23. The physician orders penicillin G 1,000,000 units IVPB in 100 ml of NS to infuse over 0.25 hours. The IV tubing delivers 10gtts/ml. The rate of the infusion will be how many gtts/minute?
24. The IV order is for 1000 ml D5W with 40 mEq KCL every 8 hour. The IV tubing delivers 10 gtts/minute. The rate of the IV will be how many gtts/minute?
25. The order is for 100 ml D5W with 1000 mg of ampicillin IVPB every 6 hours. The IV tubing delivers 10 gtts/ml. The instructions from the pharmacist state to infuse over 30 minutes. The rate of the infusion will be how many gtts/minute?
26. The order is for 50 ml D5W with 750 mg Cipro IVPB every 8 hours. The IV tubing delivers 10 gtts/ml. The instructions are to infuse over 0.25 hours. The rate of the infusion will be how many gtts/minute?
27. The order is for 150 ml of NS with erythromycin 500 mg every 6 hour. The IV tubing delivers 10 gtts/ml. Instructions are to infuse the IVPB over 45 minutes. The rate of the infusion will be how many gtts/minute?
28. Acyclovir 400 mg in 100 ml of D5W is ordered to infuse over 0.25 hours. The IV tubing delivers 10 gtt/ml. The rate of the infusion will be how many gtts/minute?
29. The physician orders gentamicin 60 mg IVPB every 12 hours. Available to the nurse is 50 ml D5W with 60 mg of gentamicin with instructions to infuse over 30 minutes. The IV tubing delivers 10 gtts/ml. The rate of the IVPB will be how many gtts/minute?

30. The IV order is for 1000 ml D5W with 40 mEq KCl every 12 hours. The IV tubing delivers 10 gtts/ml. The rate of the infusion will be how many gtts/minute?
31. The physician's order is for 1000 ml D5NS to infuse at 150 ml/hr. The IV tubing delivers 10 gtts/ml. The rate of the infusion will be how many gtts/minute?

### **IV Infusion Pump**

32. The order is for 1000 ml D5NS every 10 hours. The IV tubing delivers 10 gtts/ml. The IV is placed on an infusion pump. The nurse would set the pump infusion rate at how many ml/hr?
33. A 100 ml IVPB is ordered to infuse over 60 minutes. The IVPB is placed on an infusion pump. The IV tubing delivers 10 gtts/ml. The rate of the infusion will be set at how many ml/hour?
34. The physician's order is for 1000 ml of D5/.45 NS every 6 hours. The IV tubing delivers 10 gtts/ml. The IV is placed on an infusion pump. At what rate will the nurse set the infusion pump?
35. The order is for 250 ml of D5W with 1500 mg vancomycin every 18 hours. The pharmacist's instructions state to infuse the IVPB via an infusion pump over 90 minutes. At what rate will the nurse set the IV pump?
36. The order is for 1200 mg of vancomycin in 150 ml of D5W to infuse over 90 minutes via an infusion pump. At what rate would the nurse set the infusion pump?
37. Aqueous penicillin G 1 million units is ordered IVPB every 6 hours. Available to the nurse is 100 ml D5W with 1 million units of penicillin G with instructions to infuse over 0.25 hours via an infusion pump. The rate of the infusion pump will be set at how many ml's/hour?
38. The order is for KCl 20 mEq in a 100 ml of IV fluid to infuse via an infusion pump over 2 hours. At what rate will the nurse set the IV pump?
39. The order is for Kefzol 500 mg IVPB every 6 hours. Available to the nurse is 50 ml of D5W with 500 mg of Kefzol with instructions to infuse over 0.50 hours. The IVPB is to infuse via an infusion pump. At what rate will the nurse set the pump?
40. The order is for Kefzol 0.5G IVPB in 100ml D5W to run over 15 minutes. The IVPB is to infuse via an infusion pump. The IV tubing delivers 10 gtts/ml. The rate of the infusion will be how many ml's/hour?

**Drips**

41. The heparin drip is infusing at 19 ml/hour. Available to the nurse is 250 ml of D5W with 25,000 units of heparin. The IV tubing delivers 12 gtts/minute. How many units/hour is the client receiving?
42. The physician orders 100 ml of D5W with 20mEq KCl to infuse at 10 Eq/hour. The rate of the infusion will be how many ml/hr?
43. 1000 ml D5W with a 100 mg of Thiamine is ordered for the client with cirrhosis. The order is to infuse the thiamine at 5 mg/hr. The IV is placed on an infusion pump. The rate of the infusion will be how many ml/hr?
44. The physician's order is for 10 units of regular Insulin/hour. Available to the nurse is 250 ml NS with 125 units of regular Insulin with instructions to infuse with an infusion pump. The rate of the infusion will be how many ml/hr?
45. The client's heparin drip is ordered to be increased to 2200 units/hour. The heparin drip of 250 ml D5W with 25,000 units of heparin is currently infusing at 1800 units/hour. At how many ml/hour will the heparin drip now infuse?
46. The order is for the client to receive a heparin drip at 30 ml/hour. Available to the nurse is 250 ml D5W with 25,000 units of heparin. The IV tubing delivers 10gtts/ml. How many units of heparin will the client receive per hour?
47. The order is for regular insulin 3 units/hour. Available to the nurse is 1000 ml D5W with 100 units of regular insulin. The nurse would set the rate of the infusion pump at how many ml/hour?
48. The order is for theophylline 24 mg/hour. Available to the nurse is 1000 ml D5W with 2 g of theophylline. The nurse would set the rate on the infusion pump at how many ml/hour?
49. A heparin drip is ordered to infuse at 1100 units/hour. Available to the nurse is 250 ml DW with 25,000 unit of Heparin. How many ml/hr will the client receive?
50. The order is for 250 ml D5W with 25,000 units of heparin to infuse at 850 units per hour. The client would receive how many ml/hour?
51. Calcium gluconate 2000 mg in 100 ml D5W is ordered to infuse at 2 g/hr. The rate of the infusion via an infusion pump will be how many ml/hr?
52. Diltiazem 5 mg/hr is ordered via an infusion pump. Available to the nurse is 250 ml NS with diltiazem 125 mg. The rate of the infusion will be how many ml/hr?

53. 500 ml of D5W with 0.5 g theophylline is ordered to infuse at 50 ml/hour. How many mg/hour will the client receive per hour?
54. The physician orders the client to receive a bolus of 80 units of heparin per kg of body weight. The client weighs a 130 pounds. Available to the nurse is a vial of heparin labeled 10,000 units/ml. The nurse would administer how many ml's? Following administration of the bolus, a heparin drip at 1800 units/hour is to be started. Pharmacy prepares the heparin drip, 250 ml of D5W with 25,000 unit of Heparin. The rate of the infusion will be how many ml/hr?

**Maximum dosage**

55. The physician's order is for Tylenol #4 (codeine 60 mg with acetaminophen 500 mg) every 4 hr po prn. The client has received two doses (0100 hours and 0600 hours). How many tablets could the client safely receive in next 18 hours?

6/09

**ANSWERS TO MEDICATION PRACTICE PROBLEMS**

1. 1.5 tablets
2. 2 tablets
3. 2 tablets
4. 1 tablet
5. 4.8 ml
6. 0.3 ml
7. 1 ounce
8. 0.75 ml
9. 2 ml
10. 0.25 ml
11. 0.9 ml
12. 1.02 ml
13. 0.75 ml
14. 1.2 ml
15. 1.5 ml
16. 20 units
17. 17 units
18. 12 units
19. 125 ml/hr
20. 12 hours
21. 2230 hours
22. 125 ml/hr
23. 66.66 gtts/min or 67 gtts/min
24. 20.83 gtts/min or 21 gtts/min
25. 33.33 gtts/min or 33 gtts/min
26. 33.33 gtts/min or 33 gtts/min
27. 33.33 gtts/min or 33 gtts/min
28. 66.66 gtts/min or 67 gtts/min
29. 16.66 gtts/min or 17 gtts/min
30. 13.88 gtts/min or 14 gtts/min
31. 25 gtts/min
32. 100 ml
33. 100 ml
34. 166.66 ml or 167 ml
35. 166.66 ml or 167 ml
36. 100 ml
37. 400 ml
38. 50 ml
39. 100 ml
40. 400 ml
41. 1900 units
42. 50 ml
43. 50 ml
44. 20 ml

45.22 ml  
46.3,000 units  
47.30 ml  
48.12 ml  
49.11 ml  
50.8.5 ml  
51.100 ml  
52.10 ml  
53.50 mg  
54.0.472 ml and 18 ml  
55.4 tabs