

Drug Dose Calculation Practice Problems
Answer Key

1. 19gtts/min
2. 0.62mL
3. 166.67mL/hr
4. 2mL
5. 490.8mg
6. 1.29mL or 1.3 mL
7. 250mL/hr
8. 25gtts/min
9. 2mL
10. 33gtts/min
11. 0.67mL
12. 20mL
13. 1.5 tablets
14. 2.5mL
15. 250mL
16. 1.21mL
17. 0.75mL
18. 106gtts
19. 960mL
20. 1.4mL

1. 1500mL of D5W is to be infused at 75mL/hr.
The drop factor of the available IV tubing is 15gtts/mL.
What will be the prescribed drip rate in gtts/min?

19gtts/min

$$\frac{V}{T} \frac{75\text{mL}}{60\text{min}} \times 15 = 18.75\text{gtts/min} = 19\text{gtts/min}$$

$$\frac{V}{C} \frac{75\text{mL}}{4} = \underline{19\text{gtts/min}}$$

2. The nurse practitioner orders Kefzol 0.6mg/kg IM every 6 hours
The vial available on the unit is labeled: Kefzol 10mg/mL.
Your patient weighs 22 lbs. 12 oz.
How many mL(s) will your patient receive per prescribed dose?

0.62mL

$$\frac{22.75\text{lbs}}{2.2} = 10.34\text{kg}$$

$$10.34\text{kg} \times 0.6\text{mg/kg} = 6.2\text{mg}$$

$$\frac{DO}{DH} \frac{6.2\text{mg}}{10\text{mg}} \times 1\text{mL} = \underline{0.62\text{mL}}$$

3. The physician orders an IV of 1 liter of 0.9% normal saline to infuse in 6hrs.
What is the hourly flow rate prescribed in mL/hr utilizing an infusion pump?

166.67mL/hr

$$\frac{V}{T} \frac{1000\text{mL}}{6\text{hrs}} = \underline{166.66\text{mL/hr}} = \underline{166.67\text{mL/hr}}$$

4. The physician orders Ceclor 50mg po bid for your patient.
Available on the unit is Ceclor 125mg/5mL.
How many mL(s) of Ceclor should the nurse give per prescribed dose?

2mL

$$\frac{DO}{DH} \frac{50\text{mg}}{125\text{mg}} \times 5\text{mL} = \underline{2\text{mL}}$$

5. The physician orders Amoxicillin (oral suspension) 40mg/kg/day for your patient.
Your patient weighs 27 lbs.
How many mg(s) will your patient receive **per day**?

$$\underline{490.8mg/day}$$

$$\frac{27lbs}{2.2} = 12.27kg$$

$$12.27kg \times 40mg/kg/day = \underline{490.8mg/day}$$

6. The nurse practitioner has ordered Ampicillin 25mg/kg IM
Ampicillin is available in vials containing 1g/mL.
Your patient weighs 114lbs, 4oz.
How many mL(s) will be given to your patient per prescribed dose?

$$\underline{1.3mL}$$

$$\frac{114.25lb}{2.2} = 51.93kg$$

$$51.93kg \times 25mg/kg = 1298.25mg = 1.29g \text{ or } 1.3g$$

$$\frac{DO \ 1.29g}{DH \ 1g} \times 1mL = \underline{1.29mL \text{ or } 1.3mL}$$

7. The nurse is to administer Minocycline 75mg IVPB q12hr
Minocycline is diluted in 500mL of NS which is to be infused over 2 hrs.
The IV tubing drip factor is 15gtts/mL.
How many mL(s) will your patient receive in one hour?

$$\underline{250mL/hr}$$

$$\frac{V \ 500mL}{T \ 2hrs} = \underline{250mL/hr}$$

8. Reglan 15mg in 50mL D5W is ordered for your patient to run over 20mins.
The IV tubing drop factor is 10gtts/mL.
What is the prescribed drip rate in gtts/min?

25gtts/min

$$\frac{V}{T} \frac{50mL}{20 \text{ min}} \times 10 = 25 \text{gtts/min}$$

$$\frac{V}{T} \frac{50mL}{20 \text{ min}} = \frac{x}{60 \text{ min}} \quad 20x = 3000mL \quad x = \frac{3000mL}{20} = 150mL/hr$$

$$\frac{V}{C} \frac{150mL}{6} = \underline{25 \text{gtts/min}}$$

9. The patient is to receive hydroxyzine 100mg IM q6h.
Available on the unit is hydroxyzine 50mg/mL.
How many mL(s) will the nurse administer per prescribed dose?

2mL

$$\frac{DO}{DH} \frac{100mg}{50mL} \times 1mL = \underline{2mL}$$

10. Ticarcillin 1g in 50mL of D5W is to infuse over 30 minutes by IVPB.
The tubing drip factor is 20gtts/mL.
What will be the prescribed drip rate in gtts/min?

33gtts/min

$$\frac{V}{T} \frac{50mL}{30 \text{ min}} \times 20 = 33.33 \text{gtts/min} = 33 \text{gtts/min}$$

or

$$\frac{V}{T} \frac{50mL}{30 \text{ min}} = \frac{xmL}{60 \text{ min}} \quad 30x = 3000 \quad x = \frac{3000}{30} = 100mL$$

$$\frac{V}{C} \frac{100mL}{3} = 33.33 \text{gtts/min} = \underline{33 \text{gtts/min}}$$

11. The patient is to receive morphine sulfate $\text{gr} \frac{1}{6}$ IM q4h prn for pain.
Available on the unit is morphine sulfate 15mg/mL.
How many mL(s) would the nurse administer per prescribed dose?

0.67mL

$$\text{gr} \frac{1}{6} \times \frac{60}{1} = 10\text{mg}$$

$$\frac{DO}{DH} \frac{10\text{mg}}{15\text{mg}} \times 1\text{mL} = \underline{0.67\text{mL}}$$

12. The physician has ordered Decadron 300mcg po.
The label reads Decadron 0.15mg/10mL.
How many mL(s) will the patient receive per prescribed dose?

20mL

$$\frac{DO}{DH} \frac{0.3\text{mg}}{0.15\text{mg}} \times 10\text{mL} = \underline{20\text{mL}}$$

13. The patient is to receive $\text{gr} \frac{3}{4}$ of Phenobarbital po.
Phenobarbital is available in 30mg/scored tablets.
How many tablet(s) will your patient receive per prescribed dose?

1.5tablets

$$\text{gr} \frac{3}{4} \times \frac{60}{1} = \frac{180}{4} = 45\text{mg}$$

$$\frac{DO}{DH} \frac{45\text{mg}}{30\text{mg}} \times 1\text{tablet} = \underline{1.5\text{tablets}}$$

14. The physician has ordered Penicillin 500,000u IM q6h.
Available on the unit is Penicillin 200,000u/mL
How many mL(s) would your patient receive per prescribed dose?

2.5mL

$$\frac{DO}{DH} \frac{500,000u}{200,000u} \times 1mL = \underline{2.5mL}$$

15. The physician ordered 500 mL of 1/2 strength Ensure qid via the patient's G-tube
The order also includes a flush with 60mL of water via the patient's G-tube after each feeding
How many mL(s) of the feeding solution only will be Ensure per feeding?

250mL

$$\frac{1}{2} \times \frac{500}{1} = \underline{250mL} \quad \text{or} \quad 500 \times 0.5 = \underline{250mL}$$

16. The physician has ordered Ceclor 20mg/kg/day IM in three divided doses po.
The infant weighs 10lbs.
Available is Ceclor 125mg/5mL.
How much in mL(s) will you administer per prescribed dose?

1.2mL

$$\frac{10lbs}{2.2} = 4.55kg$$

$$4.55kg \times 20mg/kg/day = 91mg/day$$

$$91mg/3 \text{ doses} = 30.33mg/dose$$

$$\frac{DO}{DH} \frac{30.33mg}{125mg} \times 5mL = \underline{1.21mL}$$

17. The physician has ordered 7500u of Penicillin IM bid for your patient.
The label reads Penicillin 10,000u/mL.
How many mL(s) will your patient receive per prescribed dose?

0.75mL

$$\frac{DO}{DH} \frac{7,500u}{10,000u} \times 1mL = \underline{0.75mL}$$

18. The physician orders 850mL of D5½ NS to infuse in 8 hours.
The drop factor is 60gtts/mL.
What will the flow rate be in gtts/min? 106gtts/min

$$\frac{V}{T} \frac{850mL}{8hrs} = 106.25mL/hr = 106mL/hr$$

$$\frac{V}{C} \frac{106mL}{1} = \underline{106gtts/min}$$

19. The order is for you patient to receive Phospha-soda for his Barium Enema prep.
He is to drink 32oz.
How many mL(s) will your patient drink to receive the prescribed dose?

$$\underline{960mL}$$

$$32oz \times 30mL = \underline{960mL}$$

20. The physician has ordered Ceftriaxone 350mg po.
Available on the unit is a vial labeled Ceftriaxone 500mg/2mL
How many mL(s) will you give for each prescribed dose?

$$\underline{1.4mL}$$

$$\frac{DO}{DH} \frac{350mg}{500mg} \times 2mL = \underline{1.4mL}$$