Drug calculations for nurses: 15 practice questions with answers

Work each question out on paper, with units at every step, before you check the answers. Give drops per minute as whole numbers and pump rates in mL/hr to 1 decimal place unless the question says otherwise. Round only at the final step.

Formulas

- Dose = what you want ÷ what you've got × what it's in
- Weight-based dose = dose per kg × weight in kg
- mL/hr = volume (mL) ÷ time (hours)
- Drops per minute = volume (mL) × drop factor ÷ time (minutes)
- 1 g = 1,000 mg; 1 mg = 1,000 micrograms; 1 L = 1,000 mL

Questions

Unit conversions

1. Convert 0.075 g to milligrams.
2. Convert 0.125 mg to micrograms.
3. Convert 2,500 micrograms to milligrams.

Tablets

4. Furosemide 40 mg is prescribed. The stock is 20 mg tablets. How many tablets do you give?
5. Prednisolone 30 mg is prescribed. The stock is 5 mg tablets. How many tablets do you give?
6. A medicine 1.5 g is prescribed. The stock is 500 mg tablets. How many tablets do you give?

Liquids and injections

7. Amoxicillin 0.5 g is prescribed. The stock is 250 mg in 5 mL. What volume do you give?
8. Morphine sulfate oral solution 5 mg is prescribed. The stock is 10 mg in 5 mL. What volume do you give?
9. An injection of 75 mg is prescribed. The ampoule contains 100 mg in 2 mL. What volume do you give?
10. Digoxin 62.5 micrograms is prescribed. The stock is 50 micrograms in 1 mL. What volume do you give?

Weight-based dose

11. Paracetamol 15 mg/kg is prescribed for a child weighing 18 kg. The stock is 120 mg in 5 mL. What dose and what volume do you give? Give the volume to 2 decimal places.

Infusions

12. A dose of 4 mg per hour is prescribed. The syringe contains 100 mg in 50 mL. What rate do you set, in mL/hr?

13. 500 mL of sodium chloride 0.9% is to run over 6 hours on a pump. What rate do you set, in mL/hr?
14. 1,000 mL of sodium chloride 0.9% is to run over 6 hours using a giving set of 20 drops per mL. How many drops per minute?
15. 350 mL of blood is to run over 3 hours using a blood giving set of 15 drops per mL. How many drops per minute?

Answers

No.	Working	Answer
1	0.075 × 1,000	75 mg
2	0.125 × 1,000	125 micrograms
3	2,500 ÷ 1,000	2.5 mg
4	40 ÷ 20 × 1	2 tablets
5	30 ÷ 5 × 1	6 tablets
6	1,500 ÷ 500 × 1	3 tablets
7	500 ÷ 250 × 5	10 mL
8	5 ÷ 10 × 5	2.5 mL
9	75 ÷ 100 × 2	1.5 mL
10	62.5 ÷ 50 × 1	1.25 mL
11	15 × 18 = 270 mg; 270 ÷ 120 × 5	270 mg, 11.25 mL
12	4 ÷ 100 × 50	2 mL/hr
13	500 ÷ 6 = 83.33	83.3 mL/hr
14	1,000 × 20 ÷ 360 = 55.56	56 drops/min
15	350 × 15 ÷ 180 = 29.17	29 drops/min

Check before you move on

- Did you convert to the same unit before dividing?
- Does the answer match your rough estimate?
- Did you use minutes for drops per minute and hours for mL/hr?
- Have you written the unit with every answer?

Drop factors and rounding instructions on your own university's test paper always take priority over this sheet.

Made by Medly AI. Practise more questions at medlyai.com.