25 problems. Show your units.

Questions 1-5: Dose, tablets, and liquid volume

Fictional math exercises using supplied orders and concentrations, not patient dosing recommendations. In clinical practice, verify the order, patient factors, product label, and required checks. Worked answers start on page 6.

1. The supplied order is 650 mg. Each tablet contains 325 mg. How many tablets are required?

2. The supplied order is 125 mg. The liquid contains 250 mg in 5 mL. What volume is required?

3. The supplied order is 0.75 g. Each tablet contains 250 mg. How many tablets are required?

4. The supplied order is 1 g. The labeled solution contains 2 g in 100 mL. What volume contains the ordered amount?

5. The supplied order is 0.4 mg. The label states 0.8 mg in 2 mL. What volume contains 0.4 mg?

25 problems. Show your units.

Questions 6-10: IV pump rates: mL/hr

Use the supplied fictional order and concentration. Write the desired units, cancel units, and round only at the end as directed. Clinical devices and policies determine clinical measurement and programming precision.

6. A supplied order calls for 100 mL over 30 minutes. Calculate mL/hr.

7. A supplied order calls for 1,000 mL over 10 hours. Calculate mL/hr.

8. A supplied order calls for 250 mL over 2.5 hours. Calculate mL/hr.

9. A supplied order calls for 400 mL over 3 hours. Calculate mL/hr, rounded to the nearest 0.1 mL/hr for this exercise.

10. A supplied order calls for 75 mL over 45 minutes. Calculate mL/hr.

25 problems. Show your units.

Questions 11-15: Gravity infusions: gtt/min

Use the supplied fictional order and concentration. Write the desired units, cancel units, and round only at the end as directed. Clinical devices and policies determine clinical measurement and programming precision.

11. Infuse 1,000 mL over 8 hours using tubing labeled 15 gtt/mL. Calculate the nearest whole gtt/min.

12. Infuse 500 mL over 4 hours using tubing labeled 10 gtt/mL. Calculate the nearest whole gtt/min.

13. Infuse 250 mL over 2 hours using tubing labeled 20 gtt/mL. Calculate the nearest whole gtt/min.

14. Infuse 125 mL over 1 hour using tubing labeled 15 gtt/mL. Calculate the nearest whole gtt/min.

15. Infuse 75 mL over 30 minutes using tubing labeled 60 gtt/mL. Calculate the nearest whole gtt/min.

25 problems. Show your units.

Questions 16-20: Weight-based and divided doses

Use the supplied fictional order and concentration. Write the desired units, cancel units, and round only at the end as directed. Clinical devices and policies determine clinical measurement and programming precision.

16. A fictional weight-based order states 25 mg/kg/dose for an 18 kg patient. The supplied liquid contains 250 mg in 5 mL. Calculate mL per dose.

17. A fictional order states 40 mg/kg/day for a 20 kg patient, divided into 4 equal doses. The liquid contains 100 mg in 5 mL. Calculate mL per dose.

18. A fictional order states 5 mg/kg/dose. The patient weighs 66 lb; use 2.2 lb = 1 kg for this exercise. The liquid contains 50 mg in 5 mL. Calculate mL per dose.

19. A fictional order states 15 mg/kg/dose for a 22 kg patient. The liquid contains 160 mg in 5 mL. Calculate mL per dose, rounded to the nearest 0.1 mL for this exercise.

20. A fictional order states 14 mg/kg/day for a 20 kg patient, divided into 2 equal doses. The liquid contains 250 mg in 5 mL. Calculate mL per dose.

25 problems. Show your units.

Questions 21-25: Weight-based infusion rates: mcg/kg/min

Use the supplied fictional order and concentration. Write the desired units, cancel units, and round only at the end as directed. Clinical devices and policies determine clinical measurement and programming precision.

21. A fictional infusion order states 5 mcg/kg/min for an 80 kg patient. The bag contains 400 mg in 250 mL. Calculate mL/hr.

22. A fictional infusion order states 7.5 mcg/kg/min for a 60 kg patient. The bag contains 400 mg in 250 mL. Calculate mL/hr, rounded to the nearest 0.1 mL/hr for this exercise.

23. A fictional infusion order states 0.05 mcg/kg/min for a 70 kg patient. The bag contains 4 mg in 250 mL. Calculate mL/hr, rounded to the nearest 0.1 mL/hr for this exercise.

24. A fictional infusion order states 0.02 mcg/kg/min for a 50 kg patient. The bag contains 1 mg in 250 mL. Calculate mL/hr.

25. A fictional infusion order states 0.375 mcg/kg/min for an 80 kg patient. The bag contains 20 mg in 100 mL. Calculate mL/hr.

Answers 1-9

Gravity rates: nearest whole gtt/min. Non-exact pump and liquid answers: nearest 0.1 unit where the question specifies. Keep intermediate precision.

1. 2 tablets

650 mg x 1 tablet / 325 mg

2. 2.5 mL

125 mg x 5 mL / 250 mg

3. 3 tablets

0.75 g x 1,000 mg / 1 g x 1 tablet / 250 mg

4. 50 mL

1 g x 100 mL / 2 g

5. 1 mL

0.4 mg x 2 mL / 0.8 mg

6. 200 mL/hr

100 mL x 60 min/hr / 30 min

7. 100 mL/hr

1,000 mL / 10 hr

8. 100 mL/hr

250 mL / 2.5 hr

9. 133.3 mL/hr

400 mL / 3 hr = 133.333... mL/hr

Answers 10-18

Gravity rates: nearest whole gtt/min. Non-exact pump and liquid answers: nearest 0.1 unit where the question specifies. Keep intermediate precision.

10. 100 mL/hr

75 mL x 60 min/hr / 45 min

11. 31 gtt/min

1,000 mL x 15 gtt/mL / 480 min = 31.25 gtt/min

12. 21 gtt/min

500 mL x 10 gtt/mL / 240 min = 20.833... gtt/min

13. 42 gtt/min

250 mL x 20 gtt/mL / 120 min = 41.666... gtt/min

14. 31 gtt/min

125 mL x 15 gtt/mL / 60 min = 31.25 gtt/min

15. 150 gtt/min

75 mL x 60 gtt/mL / 30 min

16. 9 mL/dose

25 mg/kg/dose x 18 kg = 450 mg/dose; 450 mg/dose x 5 mL / 250 mg

17. 10 mL/dose

40 mg/kg/day x 20 kg = 800 mg/day; 800 / 4 = 200 mg/dose; 200 mg/dose x 5 mL / 100 mg

18. 15 mL/dose

66 lb x 1 kg / 2.2 lb = 30 kg; 5 mg/kg/dose x 30 kg = 150 mg/dose; 150 mg/dose x 5 mL / 50 mg

Answers 19-25

Gravity rates: nearest whole gtt/min. Non-exact pump and liquid answers: nearest 0.1 unit where the question specifies. Keep intermediate precision.

19. 10.3 mL/dose

15 mg/kg/dose x 22 kg = 330 mg/dose; 330 mg/dose x 5 mL / 160 mg = 10.3125 mL/dose

20. 2.8 mL/dose

14 mg/kg/day x 20 kg = 280 mg/day; 280 / 2 = 140 mg/dose; 140 mg/dose x 5 mL / 250 mg

21. 15 mL/hr

400 mg x 1,000 mcg/mg / 250 mL = 1,600 mcg/mL; 5 mcg/kg/min x 80 kg x 60 min/hr / 1,600 mcg/mL

22. 16.9 mL/hr

400 mg x 1,000 mcg/mg / 250 mL = 1,600 mcg/mL; 7.5 mcg/kg/min x 60 kg x 60 min/hr / 1,600 mcg/mL = 16.875 mL/hr

23. 13.1 mL/hr

4 mg x 1,000 mcg/mg / 250 mL = 16 mcg/mL; 0.05 mcg/kg/min x 70 kg x 60 min/hr / 16 mcg/mL = 13.125 mL/hr

24. 15 mL/hr

1 mg x 1,000 mcg/mg / 250 mL = 4 mcg/mL; 0.02 mcg/kg/min x 50 kg x 60 min/hr / 4 mcg/mL

25. 9 mL/hr

20 mg x 1,000 mcg/mg / 100 mL = 200 mcg/mL; 0.375 mcg/kg/min x 80 kg x 60 min/hr / 200 mcg/mL

Reference checks

1 g = 1,000 mg; 1 mg = 1,000 mcg; 1 hr = 60 min. A daily dose must be divided into the stated number of administrations. Use a leading zero below one; avoid unnecessary trailing decimal zeros.

2026 NCLEX-RN Test Plan
https://www.nclex.com/files/2026_RN_Test%20Plan_English-F.pdf

NCPDP oral-liquid dosing recommendations, hosted by FDA
https://www.fda.gov/media/88498/download

FDA: safe medicine use and appropriate measuring devices
https://www.fda.gov/drugs/information-consumers-and-patients-drugs/stop-learn-go-tips-talking-your-pharmacist-learn-how-use-medicines-safely

Original GoodNurse exercises. Sources and arithmetic reviewed November 9, 2026. These are not official NCLEX questions or a validated readiness assessment.