

Calculating IV Drips Accurately – Calculations Worksheet

Lesson 1 – Overview

No practice questions.

Lesson 2 - RN Scope of Practice and Administration of Intravenous Medications

No practice questions.

Lesson 3 - Definitions

No practice questions.

Lesson 4 - Indications for Intravenous Therapy

No practice questions.

Lesson 5 - Infusion Pumps

No practice questions.

Lesson 6 - General Principles of IV Administration

No practice questions.

Lesson 7 - Mathematics – Keep it Simple

Dealing with Decimals



$$4.245 + 235.89$$

Answer: _____



$$4.245 \times 235.89$$

Answer: _____

Dealing with Fractions



In the fraction 23/89 the numerator is _____ the denominator is _____.

In the fraction 7/10 the denominator is _____ the numerator is _____.



Reduce these fractions to the lowest common denominator:

27/45, 9/18, 45/63

Answers: _____



Reduce these numbers:

50/100, 60/4,500, 3,800/245,000

Answers: _____



Multiply the fractions:

$$\frac{3}{5} \times \frac{1}{3}$$

Answer: _____

Lesson 8 - Calculating IV Drug Dosage Administration

No practice questions.

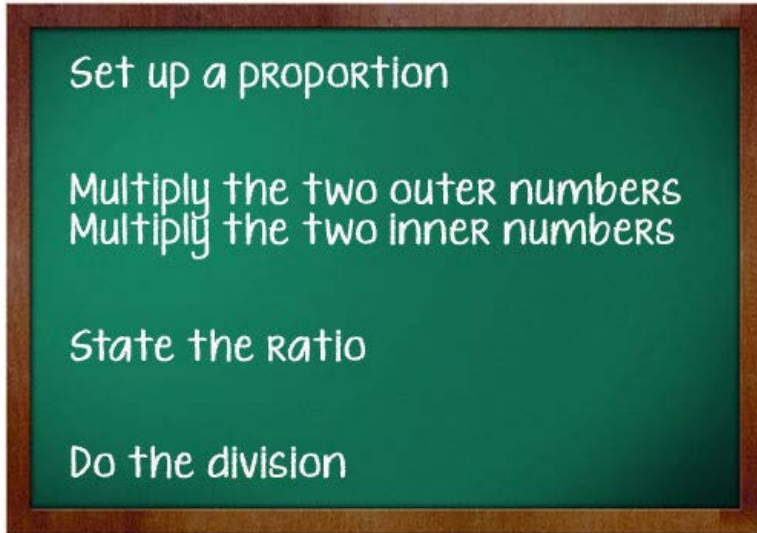
Lesson 9 - Checking/Rechecking Answers

No practice questions.

Lesson 10 - What to Do if You Don't Know the Amount of Fluid Needed?

The order reads: Give Heparin 5,000 units over 60 minutes. The IV solution contains 5,000 units of Heparin in 100 ml D5W.

First, decide how many ml's of fluid are needed to provide the ordered 5,000 units by setting up a proportion. If there are 5,000 units in 100 ml's of fluid how many ml's will be needed to administer 5,000 units.



The amount of fluid needed to provide 5,000 units of Heparin is: _____



You can then proceed to calculate the IV drip rate for 100 ml/hour based on the equipment to be used.

With a **60 drop micro drip set** - $\frac{100 \text{ ml}}{60 \text{ minutes}} \times 60 \text{ gtts/ml} = 100 \text{ gtts/minute}$

With a **15 drop set** - $\frac{100 \text{ ml}}{60 \text{ minutes}} \times 15 \text{ gtts/ml} = 25 \text{ gtts/minute}$

Answers:

60 drop set: _____ 15 drop set: _____

Try to work through this problem on your own. A complete visual walk through is provided on the next page.

The order reads: Humulin R 2 units per hour. The IV solution contains 20 units Humulin R in 1,000 ml D½ NS.

The order reads: Humulin R 2 units per hour. The IV solution contains 20 units Humulin R in 1,000 ml D_{1/2} NS.

20 units is to 1,000 ml's as 2 units is to x ml's

$$20X \text{ (outer)} = 20x$$

$$1,000 \times 2 \text{ (inner)} = 2,000$$

$$20x = 2,000$$

$$x = 100 \text{ ml's}$$

Using a 60 drop/ml set the calculation that proceeds as before:

$$\frac{100 \text{ ml}}{60 \text{ minutes}} \times 60 \text{ gtts/ml} = 100 \text{ gtts/minute}$$

Lesson 11 - Test Yourself

Try the following problems.

1. Give 1 unit (250 ml's) of packed red cells IV within 4 hours. The blood set delivers 10 gtts/ml.
2. Give 1,000 ml D5W to keep vein open over the next 24 hours. The set to be used delivers 60 drops/ml.
3. Give 150 ml of Normal Saline over 4 hours. The micro drip set delivers 60 gtts/ml.
4. Give 4,000 ml of D5W over 24 hours. The IV set package reads 20 gtts/ml.

5. Give 3,000 ml of D $\frac{1}{2}$ NS over 16 hours. The macro drip set delivers 15 gtts/ml.

6. Give 3,000 ml of D5W over 24 hours. The IV set delivers 15 gtts/ml.

7. Give 100 ml of Ringer's Lactate in 1 hour. The micro drip set delivers 60 gtts/ml.

8. Infuse Gentamicin 100 mg in 100 ml of 0.9% Normal Saline over 30 minutes.

3. Give 40 mEq of potassium chloride IV over 8 hours. The solution available contains 80 mEq in 1,000 ml of D5W. The IV set delivers 10 gtts/ml.

4. The order is to run dopamine at 15 mcg/kg/min. The IV bag has 500 mg of dobutamine in 500 ml. The patient is 110 lbs. What rate will you set the IV pump at?

Lesson 14 - Conclusion

No practice questions.