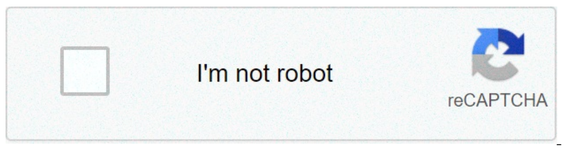

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Iv drug calculations practice questions

Welcome to your free NCLEX reviewer and practice questions quiz for IV flow rate calculations and formula. The goal of this quiz is to help student nurses review and test their competence on intravenous flow rate calculation. IV Flow Rate Calculation Nursing Test Bank The nursing test bank for IV flow rate calculations below are separated into two sets of quizzes. Included topics are IV flow rate calculation, calculating for drops per minute, calculating for milliliters per hour, and total infusion time. If you need a quick review, please read the IV flow rate reviewer below. Quizzes included in this guide are: Guidelines Read and understand each question before choosing the best answer. Since this is a review, answers and rationales are shown after you click on the "Check" button. There is no time limit, answer the questions at your own pace. Once all questions are answered, you'll be prompted to click the "Quiz Summary" button where you'll be shown the questions you've answered or placed under "Review". Click on the "Finish Quiz" button to show your rating. After the quiz, please make sure to read the questions and rationales again by click on the "View Questions" button. Comment us your thoughts, scores, ratings, and questions about the quiz in the comments section below! Get your calculators ready as this practice exam requires some serious math. In this nursing test bank are practice problems for intravenous medication dosage calculation and some questions related to regulating IV flow rate. You have already completed the quiz before. Hence you can not start it again. You must sign in or sign up to start the quiz. You must first complete the following: Quiz complete. Results are being recorded. 0 of 30 Questions answered correctly Your time: Time has elapsed You have reached 0 of 0 point(s), (0) Earned Point(s): 0 of 0, (0) 0 Essay(s) Pending (Possible Point(s): 0) Congratulations, you have completed this quiz! Looking for the rationales? Please click on the “View Questions” button below to review your answers and read through the rationales for each question. Nurse Wendell will infuse 1 ½ L of NS in over 7 hours; Drop factor: 15 gtt/mL. What flow rate (mL/hr) will nurse Wendell set on the IV infusion pump? Fill in the blank and round your final answer to a whole number. Nurse Sandra will infuse 1,200 mL of 0.45% Normal Saline at 125 mL/hr. Drop Factor: 12 gtt/mL. How many gtt/min will nurse Sandra regulate the IV? Fill in the blank and round your final answer to a whole number. Nurse Nick will infuse 1/4 L of D5W for over 2 hours and 45 mins. The drop factor is 60 drops per mL. Nurse Nick should regulate the IV for how many drops per minute? Fill in the blank and round your final answer to a whole number. Nurse Sarah will infuse 250 mL of platelets IV over 2 hr 30 min with a drop factor of 10 drops per mL. What flow rate (mL/hr) will nurse Sarah set on the IV infusion pump? Fill in the blank and round your final answer to a whole number. Nurse Tony was instructed to infuse 1 and 1/4 L of D5 with Ringer’s lactate for over 18 hours. The drop factor is 20 gtts/mL. What flow rate (mL/hr) will nurse Tony set on the IV infusion pump? Fill in the blank and record your final answer to the nearest whole number. A healthcare provider’s prescription reads infusion of 2,750 mL of 0.45% Normal Saline at 150 mL/hour. The drop factor is set at 15 drops per mL. You, as the nurse, will set the flow rate at how many drops per minute? Fill in the blank and round to the nearest whole number for your final answer. How many drops per minute will you infuse if the order reads: “Infuse 3/4 L of D5W over 5 hours and 45 minutes”. The drop factor is 60 gtts/mL. Fill in the blank and record your final answer to the nearest whole number. Nurse Jeff will infuse 1 liter of lactated ringer’s solution at 125 ml/hr via gravity flow using tubing calibrated at 15 gtt/ml. Calculate for the infusion time and provide the flow rate in drops per minute. Fill in the blank and record your answer using a whole number. A healthcare provider orders 1 liter of NSS to be infused over 24 hours using a microdrip that has a drop factor of 60 gtts/mL. You will set the flow rate at how many drops per minute to accomplish this order? Fill in the blank and round your answer to the nearest whole number. At the change of shift, you notice 200 ml left to count in your patient’s IV bag. The IV is infusing at 80 ml/hr. How much longer in hours will the IV run? Fill in the blank and record your final answer using one decimal place. The patient is ordered an IV of 1,000 ml of Normal Saline over 8 hours. At what rate would you set the IV pump in milliliters per hour? Fill in the blank and round to the nearest whole number for the final answer. The patient is ordered an IV of 1000 ml of Normal Saline over 8 hours. How many drops per minute would you set the gravity IV tubing with a drip factor of 15 drops/ml? Fill in the blank and round to the nearest whole number for the final answer. A patient is receiving 250 mL normal saline IV over 4 hours, using tubing with a drip factor of 10 drops/mL. How many drops per minute should be delivered? Fill in the blank and round to the nearest whole number for your final answer. You need to infuse 1000 mL of normal saline IV over 6 hours. How many milliliters per hour do you set on the IV infusion controller? Fill in the blank and round to the nearest whole number for your final answer. You have 500 mL of lipids on a second IV infusion controller to piggyback into a primary hyperalimentation line. You want to run the infusion over 24 hours. At what rate should you run the lipids? Fill in the blank and round to the nearest whole number for your final answer. You have 350 mL packed red blood cells that you want to infuse IV over 2 hours. There is no controller available. Your blood tubing delivers 10 gtts/mL. How many drops per minute should you set? Fill in the blank and round to the nearest whole number for your final answer. You have an order to infuse 500 mL normal saline IV over 4 hours. How many drops per minute will you set on gravity tubing that delivers 10 gtts/mL? Fill in the blank and round to the nearest whole number for your final answer. You have an order to administer 1 L of 5% Dextrose in 0.45 normal saline IV over 16 hours. How many milliliters per hour will you set on the IV infusion controller? Fill in the blank and round to the nearest whole number for your final answer. You have an order to administer 1 L of D5W IV over 8 hours. How many drops per minute will you set if you are using tubing with a drop factor of 15? Fill in the blank and round to the nearest whole number for your final answer. A 25-year-old male presents with high fever (40ºC), chills, weight loss, and anorexia. He also complains of abdominal pain. Your assessment of his vital signs reveals a heart rate of 110 bpm, respiration of 28 per minute, and blood pressure of 100/80 mmHg. Lungs are clear during auscultation and the rest of the physical assessment is unremarkable. Blood culture was ordered and confirms the diagnosis of systemic candidiasis. The physician orders an infusion of 50 milligrams of amphotericin B (Fungizone) in 250 milliliters of normal saline over 4 hours and 15 minutes in tubing with a drop factor of 12 drops per minute. At what flow rate will you set the IV pump? Fill in the blank and round to the nearest whole number for your final answer. Nurse Jeremy will infuse cefamandole (Mandol) 300 mg in 50 mL of D5W IVPB for 15 minutes; Drop factor: 10 gtt/mL. How many mL/hr will nurse Jeremy set on the IV infusion pump? Fill in the blanks. Record your answer to the nearest whole number. A 66-year-old client who is alert and oriented has been receiving hemodialysis three times a week during the last 4 years. Upon follow-up check up, the client complains of difficulty of breathing and chest pain and was later on diagnosed with pneumonia. Assessment reveals a temperature of 39.0ºC, heart rate of 98 bpm, respiratory rate of 38 bpm, and a blood pressure of 110/80 mmHg. The physician prescribes ceftriaxone (Rocephin) 0.5 grams in 250 mL of D5W to infuse via IV piggyback within 45 minutes. The drop factor is set at 12 drops per minute. How many drops per minute will you regulate the IVPB to suffice this order? Fill in the blank and round off your final answer to the nearest whole number. A primary healthcare provider orders ranitidine HCl (Zantac) 150 mg in 175 mL of D5W to infuse via intravenous piggyback over 45 minutes. The drop factor is set at 12 drops per mL. How many mL/hr will you set on the IV infusion pump? Fill in the blank and round to the nearest whole number for your final answer. A health care provider orders cefoxitin (Mefoxin) 0.5 g in 275 mL of D5W to infuse IVPB over 2 hours; Drop Factor: 60 gtt/mL. How many gtts/min will you regulate the IV? Fill in the blank and round to the nearest whole number for your final answer. A health care provider prescribes cephalothin (Keflin) 2 g in 100 ml D5W IVPB over 20 minutes. The I.V. tubing is 15 gtts/ml. Calculate the flow rate in drops per minute. Fill in the blank and round to the nearest whole number for your final answer. A 44-year-old female patient with thrombosis is undergoing anticoagulant therapy. Her primary healthcare provider writes an order for heparin sodium 900 units per hour. The label on the IV bag contains 10,000 units of heparin in 500 mL of D5W. How many milliliters per hour is needed to deliver the correct dose? Fill in the blank and round to the nearest whole number for your final answer. You have an order of heparin 1,000 units/hr from an I.V. bag mixed 40,000 units in 1 L D5W. Calculate for the milliliters per hour needed to deliver the correct amount of heparin. Fill in the blank and round to the nearest whole number for your final answer. The patient’s Heparin is infusing at 28 ml/hr on an infusion pump. The bag of fluid is mixed with 20,000 units of Heparin in 500 ml D5W. Calculate how many units of heparin the patient is receiving hourly. Fill in the blank and round to the nearest whole number for your final answer. The patient’s heparin drip is infusing at 11 ml/hr on an infusion pump. The bag of fluid is mixed 25,000 units of Heparin in 250 ml D5W. Calculate how many units of heparin the patient is receiving hourly. Fill in the blank and round to the nearest whole number for your final answer. IV Flow Rate Calculations Reviewer & Formulas The IV flow rate study guide below will help refresh your memory on calculating IV flow rates including a refresher on the formulas and nursing considerations when maintaining IV therapy. For more information about IV fluids, visit our IV Fluids and Solutions Guide and Cheat Sheet How to Calculate IV Flow Rate? To calculate IV flow rates, the nurse must know the total volume of fluid to be infused and the specific time for the infusion. Intravenously administered fluids are prescribed most frequently based on milliliters per hour to be administered. The volume per hour prescribed is administered by setting the flow rate, which is counted in drops per minute.There are three commonly used ways on how to indicate flow rates:Milliliters per hour (mL/h). Calculated by dividing the total infusion volume by the total infusion time in hoursNumber of drops per one (1) minute (gtts/min). Calculated by multiplying the total infusion volume to the drop factor and then dividing by the total infusion time in minutes. Infusion time. Total volume to infuse divided by milliliters per hour being infused. Drop factor (sometimes called drip factor). The total number of drops delivered per milliliters of solution. This rate varies by brand and types of infusion sets and are printed on the package of the infusion set. Generally, macrodrops have a drop factor of 10, 12, 15, or 20 drops/mL.Microdrip sets, on the other hand, have a drop factor of 60 drops/mL. FORMULA FOR CALCULATING MILLILITERS PER HOUR (mL/hour)EXAMPLE:Your patient needs 2,000 mL of saline IV over 4 hours for a patient with deficient fluid deficient fluid volume. How many milliliters per hour will you set on a controller?Where:Total infusion volume (mL) = 2,000 mLTotal infusion time = 4 hoursComputation:Answer:500 mL/hour FORMULA FOR CALCULATING DROPS PER MINUTE (gtts/min)EXAMPLE:A patient is receiving 250 mL normal saline IV over 4 hours, using tubing with a drip factor of 10 drops/mL. How many drops per minute should be delivered?Where:Total infusion volume = 250 mLDrop factor = 10 gtts/mLTotal infusion time = 4 hours or 240 minutesCalculate:Answer:10 gtts/min (rounded off)Fun fact: gtts is an abbreviation of the latin word “guttae” meaning drops. FORMULA FOR INFUSION TIME (H) Example:A patient is ordered to received 1,000 mL of NSS to be administered at 125 mL/hour. How many hours will pass before you change the IV bag?Where:Total volume to infuse = 1,000 mLmL infused per hour = 125 mL/hourCalculate:Answer:8 hours How to Regulate IV Fluids? The following factors affect the infusion rate if an infusion pump is not used: Size of the catheter. A catheter with a larger bore allows solution to flow faster. Height of the IV bag. The higher the IV bag, the faster the infusion will flow. Position of the insertion site. A change in the position of the client’s arm may decrease the flo, while elevation on a pillow may increase flow rate. If the IV is inserted into the antecubital area, the solution can flow freely if the client extends the arm and can be obstructed if the client bends the arm at the elbow. Monitoring and regulating the rate of the infusion is a responsibility of the nurse. A slower rate is usually necessary for older adults or those who are at risk of fluid overload (e.g., heart disease or client with head injury). A faster IV flow rate is therapeutic for patients who have lost large amounts of body fluids and those who are severely dehydrated. Never increase the rate of infusion if it is running behind schedule. Check for obstructions and collaborate with primary care providers to determine the patient’s ability to tolerate an increased flow rate. Flow rate is regulated by tightening or releasing the IV tubing clamp and counting the drops for 15 seconds then multiplying the number 4 to get drops per minute.Sometimes, the IV rate order will say “to keep open” (TKO) or “keep vein open” (KVO). This order does not specify the Milliliters per hour. Generally, KVO is infused at 50 mL/h. Flow-Control Devices Flow-control devices are any manual, mechanical, or electronic infusion device used to regulate the IV flow rate. These devices may include manual flow regulators, elastomeric balloon pumps, and electronic infusion devices. Electronic infusion devices (EIDs)EIDs are often used in acute care settings and use positive pressure to deliver a preset fluid volume at preset limits. They are programmed to regulate the IV flow rate in either drops per minute or milliliters per hour. EIDs use gravity to maintain the flow of the IV fluid. They sense the rate and amount of IV fluid. An alarm is set off if there is air in the tubing, the bag is empty, or the flow is obstructed. However, the nurse should still conduct regular evaluations of the IV site. Multichannel pumpsAnother type of flow-control device that can deliver several medications and fluids (from either bags, bottles, or syringes) at the same time, at multiple rates. Multichannel pumps usually have two to four channels with each channel that can be programmed independently. Mechanical flow-control devicesAre nonelectric devices used to regular IV flow rate. These are in-line devices with a manual regulator that controls the amount of fluid to be administered. Rotating a dial sets the flow rate. Elastomeric infusion pumpsAre disposable, portable, and nonelectric pumps that are prefilled with medication and connect to the client’s needleless connector to deliver a controlled rate of medication. Monitor for infiltration or irritation. Inspect the insertion site for fluid infiltration. If present, stop the infusion and remove the catheter. Restart the infusion at another site and start supportive treatment by elevating or applying heat to the site. Look for signs of infiltration. Infiltration occurs when the IV fluid is not flowing into the client’s vein but into surrounding tissues. Signs of infiltration include swelling or puffiness, coolness, pain at the insertion site, and tenderness in the area. Monitor for signs of phlebitis. Phlebitis is the inflammation of the vein. Signs include pain and tenderness, swelling, and warmth in the area. If phlebitis occurs, stop infusion and restart at another site. Do not use the injured vein again. Regularly monitor IV flow rate. Monitor IV flow rate regularly (every hour) even if the solution is administered through an IV pump. Assess for fluid overload. Regularly assess the patient for signs of fluid overload: increased heart rate, increased respirations, and increased lung congestion. Risk for fluid overload. IV flow-control devices should be used for older and pediatric patients when administering IV fluids. These age groups are at risk for complications of fluid overload.Proper documentation. Document all findings on the IV flow sheet or in the computer. Including the total amount of fluid administered, and any adverse responses of the client. If you need more information or practice quizzes, please do visit the following links: Nursing Test Bank: Free Practice Questions UPDATED! Are you ready to learn? Check out our updated nursing test bank that includes over 3,500 practice questions covering a wide range of nursing topics that are absolutely free! NCLEX Questions Nursing Test Bank and Review UPDATED! For this nursing test bank, we have included more than 1,000+ NCLEX practice questions covering different nursing topics! We’ve made a significant effort to provide you with the most challenging questions along with insightful rationales for each question to reinforce learning.

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