

HESI Dosage Calculations Practice Exam, Hesi Pharmacology Review 300 QUESTIONS AND ANSWERS GRADED A LATEST 2023/2024

A client with cardiogenic shock weighs 220 lb and is receiving dopamine at the rate of 3 mcg/kg/minute. The solution strength available is dopamine 400 mg in 250 ml of D5W. The nurse should set the infusion pump to deliver how many ml/hour? (Enter numeric value only. If rounding is required, round to the nearest tenth.) - **CORRECT ANSWER 11.3**

First, convert pounds to kg, $220 \text{ lb} : X = 2.2 \text{ lb} : 1 \text{ kg} = 100 \text{ kg}$. Next, calculate the dosage per minute, $3 \text{ mcg/kg/min} \times 100 \text{ kg} = 300 \text{ mcg/min}$. Convert mcg/min to mcg/hour, $300 \text{ mcg/min} \times 60 \text{ min} = 18,000 \text{ mcg/hour}$. Convert mcg/hr to mg/hour, $18,000 \text{ mcg/hr} = 18.0 \text{ mg/hour}$. Calculate the rate, $400 \text{ mg} : 250 \text{ ml} = 18 \text{ mg} : X \text{ ml}$
 $400X = 4500$
 $X = 11.25 = 11.3 \text{ ml}$. So, 18 mg/11.3 ml should be infused at 11.3 ml/hour.

A client with hypertension who weighs 72.4 kg is receiving an infusion of nitroprusside (Nipride) 50 mg in D5W 250 ml at 75 ml/hour. How many mcg/kg/minute is the client receiving? (Enter numeric value only. If rounding is required, round to the nearest tenth.) - **CORRECT ANSWER 3.5**

Calculate the mg/hour infusing, $50 \text{ mg} : 250 \text{ ml} = X : 75 \text{ ml}$
 $250X = 3750$ and $X = 15 \text{ mg/hour}$. Next, convert mg/hr to mcg/hour, $15 \text{ mg/hour} = 1 \text{ mg} / 1000 \text{ mcg} = 15,000 \text{ mcg/hour}$, then divide by 60 min = 250 mcg/minute. Lastly, $250 \text{ mcg}/72.4 \text{ kg/min} = 3.45 = 3.5 \text{ mcg/kg/minute}$.

A client who weighs 70 kg is receiving a dopamine solution of 800 mg/500 ml normal saline at 5 ml/hour. How many mcg/kg/minute is the client receiving? (Enter numeric value only. If rounding is required, round to the nearest tenth.) -

CORRECT ANSWER 1.9

To change ml/hour to mcg/kg/minute, use the formula: desired rate (5 ml/hour) / volume available (500 ml) x dose available (800 mg) = 8 mg/hour. Next, convert milligrams/hour to mcg/kg/minute: mg (8) x 1000 / kg (70) / 60 minutes = 1.904 = 1.9 mcg/kg/minute.

A client is receiving an IV solution of sodium chloride 0.9% (Normal Saline) 250 ml with amiodarone (Cordarone) 1 gram at 17 ml/hour. How many mg/minute of amiodarone is infusing? (Enter numeric value only. If rounding is required, round to the nearest tenth.) - **CORRECT ANSWER** Convert grams to mg, 1 gram equals 1,000 mg. Using ratio and proportion - 1,000 mg : 250 ml :: X mg : 1ml 250X= 1,000 so X = 4 mg/ml is the solution concentration of amiodarone. The infusion rate (ml/hour) x concentration (mg/ml) divided by 60 minutes/hour 17 ml/hour x 4 mg/ml = 68/60 = 1.13 = 1.1 mg/minute.

A client who weighs 176 pounds is receiving an IV infusion with esmolol hydrochloride (Brevibloc) at 48 ml/hour. The IV solution is labeled with the concentration of Brevibloc 10 mg/ml. How many mcg/kg/minute is the client receiving? (Enter numeric value only.) - **CORRECT ANSWER 100**

Convert pounds to kg by dividing 176 pounds by 2.2 pounds = 80 kg. Convert the IV concentration from mg to mcg. 1 mg : 1000 mcg :: 10 mg : 10,000 mcg. Infusion rate (48 ml/hour) x concentration (10,000 mcg/ml) divided by 60 minutes/hour x 80 kg = 48 x 10,000 divided by 60 x 80 = 480,000 / 4800 = 100 mcg/kg/minute.

The nurse is preparing the change-of-shift report for a client who has a 265 ml secondary infusion that was started 2 hours ago at a rate of 85 ml/hour via an infusion pump. The nurse should report that how many ml remain to be infused by the on-coming nurse? (Enter numeric value only.) - **CORRECT ANSWER 95**

$85 \text{ ml} \times 2 \text{ hours} = 170 \text{ ml}$ has infused. 265 ml (total amount to be infused) - 170 ml (amount infused) = 95 ml remain to be infused.

A male client receives a prescription for ondansetron hydrochloride (Zofran) 4 mg IV to prevent postoperative nausea after an inguinal hernia repair. The medication is available in 2 mg/ml. How many ml should the nurse administer? (Enter numeric value only.) - **CORRECT ANSWER 2**

Use ratio and proportion, $4 \text{ mg} : X \text{ ml} = 2 \text{ mg} : 1 \text{ ml}$ $2X = 4$ $X = 2$

The nurse is preparing to administer Hepatitis B Vaccine, Recombinant (Energix-B) 5 mcg IM to a school-aged child. The vaccine is labeled, 10 mcg/ml. How many ml should the nurse administer? (Enter numeric value only. If rounding is required, round to the nearest tenth). - **CORRECT ANSWER 1 or 0.5**

Use ratio and proportion, $5 \text{ mcg} : X \text{ ml} :: 10 \text{ mcg} : 1 \text{ ml}$

$10X = 5$ $X = 0.5 \text{ ml}$

A client's daily PO prescription for aripiprazole (Abilify) is increased from 15 mg to 30 mg. The medication is available in 15 mg tablets, and the client already received one tablet today. How many additional tablets should the nurse administer so the client receives the total newly prescribed dose for the day? (Enter numeric value only.) - **CORRECT ANSWER 1**

30 mg (total dose) - 15 mg (dose already administered) = 15 mg that still needs to be administered. Using the Desired/Have formula: $15 \text{ mg} / 15 \text{ mg} = 1 \text{ tablet}$

At the end of the shift, the nurse is recording the fluid balance for a client receiving a continuous gastrostomy tube (GT) feeding. Based on the client's records, how many ml should the nurse record for the total fluid balance (intake - output) for the shift that started at 0700 and ended at 1900? (Enter numeric value only.) (Click on each image asset for additional information.) - **CORRECT ANSWER 695**

The tube feeding is administered at 75 ml/hour for 11 hours (0700 - 1800) and then turned off for one hour because the residual is greater than 200 ml. $11 \text{ hours} \times 75 \text{ ml/hr} = 825 \text{ ml}$. Three doses of 20 ml of medication are administered, with 10 ml of water used to flush the GT before and after each dose. $20 \text{ ml} \times 3 \text{ doses} = 60 \text{ ml}$; $10 \text{ ml (flush)} \times 2 \times 3 \text{ doses} = 60 \text{ ml}$; so $825 \text{ ml} + 60 \text{ ml} + 60 \text{ ml} = 945 \text{ ml}$. 250 ml of residual is removed and not replaced. $945 \text{ ml} - 250 \text{ ml} = 695 \text{ ml}$ total fluid balance (Intake - output).

The nurse is administering a 250 milliliter (ml) intravenous solution to be infused over 2 hours. How many ml/hour should the nurse program the infusion pump? (Enter numeric value only.) - **CORRECT ANSWER 125**

$250 \text{ ml} : 2 \text{ hours} = X \text{ ml} : 1 \text{ hour}$ $250 = 2X$ $X = 250 \text{ divided by } 2 = 125 \text{ ml/hr}$

The nurse is preparing to administer 0.25 mg of bumetanide (Bumex) IV. The medication is available in a vial labeled 1 mg/4 ml. How many ml of medication should the nurse administer? (Enter numeric value only.) - **CORRECT ANSWER 1**

Using the Desired/Have x Volume formula: $\text{Desired} = 0.25 \text{ mg}$ $\text{Have} = 1 \text{ mg}$ $\text{Volume} = 4 \text{ ml}$ $0.25 \text{ mg} / 1 \text{ mg} \times 4 \text{ ml} = 1 \text{ ml}$

A client with hypertension receives a prescription for carteolol (Cartel) 7.5 mg PO daily. The drug is available in 2.5 mg tablets. How many tablets should the nurse administer? (Enter numeric value only.) - CORRECT ANSWER 3

Using D/H: $7.5 \text{ mg} / 2.5 \text{ mg} = 3 \text{ tablets}$

The healthcare provider prescribes trimethoprim-sulfamethoxazole (Bactrim-DS Oral Suspension) 120 mg BID for a child with bronchitis. The Bactrim bottle is labeled 200 mg/5ml. How many ml should the nurse administer at each dose? (Enter numeric value only.) - CORRECT ANSWER 3

Using the formula $D/H \times Q$, $120/200 \times 5 = 3 \text{ ml}$

A 180-pound adult male is admitted to the Emergency Center after receiving thermal burns to 60 percent of his body. Using the Parkland formula of 4 ml/kg/24 hours, the client should receive how many ml of fluid during the first 24 hours? (Enter numeric value only. If rounding is required, round to the nearest whole number.) - CORRECT ANSWER 19632

Using the Parkland formula, the client's fluid requirements for the first 24 hours after injury: $4 \text{ ml lactated Ringer's solution} \times \text{Body weight (in kilograms)} \times \text{Percent burn}$. Convert 180 pounds to kg = $180 / 2.2 = 81.8 \text{ kg}$ $4 \text{ ml} \times 81.8 \text{ kg} \times 60 = 19632 \text{ ml}$ over the first 24 hours.

The healthcare provider prescribes acetazolamide (Diamox) 600 mg/m²/day divided into 3 doses. The nurse calculates the child's body surface area (BSA) as 0.7 m². How many mg should the child receive per dose? (Enter numeric value only.) - CORRECT ANSWER 140

Using the child's BSA, 0.7 m², calculate the mg/dose, 600 mg x 0.7 m² = 420 mg/day/3 doses = 140 mg/dose

A loading dose of acetylcysteine (Mucomyst) 8 grams, which is available as a 20% solution (200 mg acetylcysteine per ml) is prescribed by nasogastric tube for a client with acetaminophen toxicity. How many ml of diluent should be added to the medication to obtain a 1:4 concentration? (Enter numeric value only. If rounding is required, round to the nearest whole number.) - **CORRECT ANSWER 120**

8 grams = 8,000 mg prescribed dose. Using the formula, D/H x Q, 8,000 mg / 200 mg x 1 ml = 40 ml of the 20% solution. Dilute the 40 ml to a 1:4 concentration for administration using ratio and proportion, 1 : 4 solution :: 40 ml : X X= 160 ml total volume to administer. Subtract total volume of 160 ml - 40 ml of 20% concentration = 120 ml diluent is added to obtain a 1:4 concentration.

A child who weighs 55 pounds receives a prescription for atovaquone with proguanil (Malarone Pediatric) 125 mg/50 mg PO daily. A drug reference states that children 11 to 20 kg should receive 1 pediatric tablet daily; 21 to 30 kg should receive 2 pediatric tablets daily; 31 to 40 kg should receive 3 pediatric tablets daily; and greater than 40 kg should receive 1 adult tablet daily with food. The drug is available as atovaquone 62.5 mg/proguanil 25 mg pediatric tablets. How many tablets should the nurse administer? - **CORRECT ANSWER 2**

Calculate each drug component dose, using the formula, D/H 125 mg / 62.5 mg (atovaquone) = 2 combined with 50 mg / 25 mg (proguanil) = 2. The child should receive 2 tablets.

A client receives a prescription for azithromycin (Zithromax) 500 mg PO x 3 days. Azithromycin is available as 250 mg scored tablets. How many tablets should the nurse administer per dose? (Enter numeric value only. - **CORRECT ANSWER 2**)

Using the formula, D/H 500 mg/250 mg = 2 tablets

A child who is scheduled for a kidney transplant receives a prescription for basiliximab (Simulect) 20 mg IV 2 hours prior to surgery. The medication is available in a 20 mg vial that is reconstituted by adding 5 ml sterile water for injection, and administered in a 50 ml bag of normal saline over 30 minutes. The nurse should program the infusion pump to deliver how many ml/hour? (Enter numeric value only. - **CORRECT ANSWER 110**)

After reconstituting the medication vial, the nurse adds the 5 ml of medication to the 50 ml of sterile water to result in a 55 ml volume to infuse in 30 minutes. Using the formula, Volume/Time = 55 ml / 0.5 hours = 110 ml/hour

A client with a gastrostomy tube (GT) receives a prescription for Osmolite® 1/2 strength enteral formula at 80 ml/hour. To prepare a 4 hour solution, the nurse should dilute the full-strength formula with how many ml of water? (Enter numeric value only.) - **CORRECT ANSWER 160**

Determine the total volume needed at 80 ml/hour x 4 hours = 320 ml. Use the formula, Desired strength/strength on Hand x Volume = 50/100 x 320 = 160 ml of Osmolite® enteral formula, which must be diluted to half strength. Or use ratio and proportion, Desired strength (1/2 = 1 part : 2 parts) :: Volume of full strength : Total Desire volume 1 : 2 :: X : 320 ml 2X = 320, and X = 160 ml of Osmolite® enteral formula, full strength 320 ml total volume - 160 ml of full-strength formula = 160 ml of water to create 1/2 strength or 50% concentration.

The nurse notes that a client is receiving an oxytocin (Pitocin) infusion via a pump that is programmed to deliver 30 ml/hour. The available solution is Ringer's Lactated 1,000 ml with Pitocin 20 units. How many milliunits/minute is the client receiving? (Enter numeric value only.) - CORRECT ANSWER 10

Convert units to milliunits, $20 \times 1,000 = 20,000$ units. Using $D/H \times Q = 30$ ml/hour
 $X/20,000$ units $\times 1,000$ ml = 30 ml/hour (60 minutes) $X/20 = 30/60$, reduce $X/2 = 1/2$, and $2X = 20$, so $X = 10$ milliunits/minute OR $20/1,000 = 0.02$ $1000 : 0.02 :: 30 :$
 $X = 0.6 :: 1,000X$ $X = 600$ and $600/60 = 10$ milliunits/minute.

A client is receiving Heparin Sodium 25,000 Units in 5% Dextrose Injection 500 ml IV at 1,000 unit/hour per protocol for acute coronary syndrome (ACS). The client's partial thromboplastin time (PTT) is 76 seconds. Based on the ACS protocol, the infusion should be decreased by 100 units/hour for a PTT between 71 to 80 seconds. The nurse should program the pump to deliver how many ml/hour? (Enter numeric value only.) - CORRECT ANSWER 18

Adjust the infusion to 900 units/hour (1,000 units/hour minus 100 units/hour per protocol). Using the formula, $D/H \times Q$, 900 units/1 hour divided by 25,000 units \times 500 ml = $90/5 = 18$ ml/hour.

The healthcare provider prescribes oxytocin (Pitocin) 0.5 milliunits/minute for a client in labor. One liter Ringer's Lactate with 10 units of oxytocin (Pitocin) is infusing. The nurse should program the infusion pump at how many ml/hour? (Enter numeric value only.) - CORRECT ANSWER 3

Using the formula, $D/H \times Q$, 0.5 milliunits / $10,000$ milliunits $\times 1000$ ml = 0.05 ml/minute. Multiply by 60 minutes = 3 ml/hour.

Docosate sodium (Colace) 0.3 grams is prescribed for a client who has frequent constipation. Each capsule contains 100 mg. How many capsules should the nurse administer? - CORRECT ANSWER 3

Using the known equivalent, 1 gram = 1000 mg, the nurse should first convert the dose to the same unit of measurement, which is 0.3 gram = 300 milligram. Using the formula, Desired / Available x 1 capsule = $300/100 \times 1 = 3$ capsules.

A client who has a sinus infection is receiving a prescription for amoxicillin/clavulanate potassium (Augmentin) 500 mg PO q8 hours. The available form is 250 mg amoxicillin/125mg clavulanate tablets. How many tablets should the nurse administer for each dose? (Enter numeric value only.) - CORRECT ANSWER 2

Using Desired/Available formula: $500 \text{ mg}/250 \text{ mg} \times 1 \text{ tablet} = 2$

The healthcare provider prescribes acetaminophen elixir (Tylenol elixir) 600 mg PO q6 hours for an adult client experiencing pain associated with maxillofacial surgery. The bottle is labeled 500 mg/15 ml. How many ml should the nurse administer? (Enter numeric value only. If rounding is required, round to the nearest tenth.) - CORRECT ANSWER 18

Using the formula D/H x Q: $600 \text{ mg}/500\text{mg} \times 15 \text{ ml} = 18 \text{ ml}$

A client who has AIDS is receiving octreotide (Sandostatin) 1,200 mcg by subcutaneous injection every day for symptoms of diarrhea. Octreotide is available for injection in 1 mg/ml vials. How many ml should the nurse administer? (Enter numeric value only. If rounding is required, round to the nearest tenth.) - CORRECT ANSWER 1 or 1.2

First, to convert micrograms to milligrams, divide the number of micrograms by 1000: $1,200/1000 = 1.2$ mg. Using the Desired/Have available formula: $1.2 \text{ mg}/1 \text{ mg} \times 1 \text{ ml} = 1.2 \text{ ml}$.

A client is receiving dantrolene sodium (Dantrium) PO for malignant hyperthermia. The maximum safe dose is 8 mg/kg/day in 4 divided doses. The client currently weighs 48.5 kg. What is the maximum safe dose the nurse should administer? (Enter numeric value only. If rounding is required, round to the nearest whole number.) - CORRECT ANSWER 97

Determine the maximum number of mg this client should receive in a day: $48.5 \text{ kg} \times 8 \text{ mg/kg/day} = 388 \text{ mg/day}$. Next determine how many mg the nurse should deliver each dose: $388 \text{ mg}/4 \text{ doses} = 97 \text{ mg}$.

A child with a urinary tract infection is receiving Cephalexin (Keflex) 100 mg suspension PO QID. Keflex oral suspension is labeled 125 mg in 5 ml. How many ml should the nurse administer? (Enter numeric value only. If rounding is required, round to the nearest tenth.) - CORRECT ANSWER 4

Using the formula Desired/Have available x Quantity: $100/125 \times 5 = 500/125 = 4$ ml

The healthcare provider prescribes a continuous intravenous infusion of dextrose 5% and 0.45% sodium chloride with KCl 20 mEq/1000 ml to be delivered over 8 hours. The nurse should program the infusion pump to deliver how many ml/hour? (Enter numeric value only. If rounding is required, round to the nearest whole number.) - CORRECT ANSWER 125

Using the formula volume/time: $1000 \text{ ml} / 8 \text{ hours} = 125 \text{ ml/hour}$

A client receives a prescription for an intravenous infusion 0.45% sodium chloride 500 ml to be infused over 6 hours. The nurse should program the infusion pump to deliver how many ml/hour? (Enter numeric value only. If rounding is required, round to the nearest whole number.) - CORRECT ANSWER 83

Calculate using Volume/Time: $500 \text{ ml} / 6 \text{ hours} = 83.3 \text{ ml/hour}$

A client returns to the nursing unit from surgery with a prescription for Lactated Ringer's solution 1,000 ml to be infused over 10 hours. The IV administration set delivers 60 gtts/ml. The nurse should regulate the infusion to deliver how many gtts/minute? - CORRECT ANSWER 100

First convert hours to minutes: $10 \text{ hrs} \times 60 = 600 \text{ minutes}$. Using the formula Volume/Time x drop factor: $1000 \text{ ml} / 600 \text{ minutes} = 1.66666 \times 60 = 100 \text{ gtts minute}$.

An IV infusion of dextrose 5% in normal saline with oxytocin (Pitocin) 20 units in 1,000 ml is prescribed for a client to control postpartum bleeding. The solution is to be administered at a rate of 2 mu/minute. The nurse should program the infusion pump to administer how many ml/hour? (Enter numeric value only. If rounding is required, round to the nearest whole number.) - CORRECT ANSWER 6

First calculate the number of units/hour. $0.002 \text{ units/minute} \times 60 \text{ minutes} = 0.12 \text{ units/hour}$. Next calculate the number of ml/hour needed to administer 0.12 units/hour. $20 \text{ units} : 1,000 \text{ ml} :: 0.12 \text{ units} : X$ $20 / 0.12 :: 1,000 / X$ $20X = 120$ $X = 6$

The healthcare provider prescribes an IV solution of 5% dextrose in water with magnesium sulfate 4 gram/50 ml to be infused over 30 minutes for a client with preeclampsia. The nurse should program the infusion pump to deliver how many ml/hour? (Enter numeric value only. If rounding is required, round to the nearest whole number.) - CORRECT ANSWER 100

To calculate the rate of infusion for ml/hour: 50 ml: 30 minutes :: X ml : 60 minutes
 $50 \text{ ml} / X \text{ ml} :: 30 \text{ min} / 60 \text{ min}$
 $3000 = 30X$
 $X = 100 \text{ ml/hour}$

A client who has a gastrostomy feeding tube is receiving 3/4 strength Ensure 240 ml every 6 hours. Full strength Ensure is available in a 240 ml can. The nurse should use how many ml of Ensure to prepare the feeding? (Enter numeric value only. If needed, round to the nearest whole number.) - CORRECT ANSWER 180

$240 \text{ ml Ensure} : 1 :: X \text{ ml Ensure} : 0.75$
 $240/X : 1 / 0.75$
 $X = 240 \times 0.75 = 180 \text{ ml}$
Ensure + 60 ml water = 240 ml

0.9% normal saline with inamrinone (Inocor) 0.1 grams/100 ml is prescribed for a client with heart failure. The medication is to be delivered at a rate of 400 mcg/minute. The nurse should program the infusion pump to deliver how many ml/hour? (Enter numeric value only. If rounding is required, round to the nearest whole number.) - CORRECT ANSWER 24

First calculate the number of mcg/hour: $400 \text{ mcg} \times 60 \text{ minutes} = 24000 \text{ mcg/hour}$.
Next calculate the number of ml/hour needed to administer 24,000 mcg/hour:
 $100,000 \text{ mcg} : 100\text{ml} :: 24,000 \text{ mcg} : X$
 $100,000/24,000 :: 100/X$
 $100,000X = 2,400,000$
 $X = 24 \text{ ml/hour}$.

A client experiencing cardiogenic shock receives a prescription for an IV infusion of 0.9% normal saline with milrinone (Primacor) 10 mg in 100 ml at a rate of 46

mcg/minute. The nurse should program the infusion pump to deliver how many ml/hour? (Enter numeric value only. If rounding is required, round to the nearest whole number.) - CORRECT ANSWER 28

First calculate the number of mcg/hour: $46 \text{ mcg} \times 60 \text{ minutes} = 2760 \text{ mcg/hour}$.
Next calculate the number of ml/hour needed to administer 2760 mcg/hour:
 $10,000 \text{ mcg} : 100 \text{ ml} :: 2760 \text{ mcg} : X$
 $10,000 / 2760 :: 100 / X$
 $10,000X = 276000$
 $X = 27.6$ (rounded to) 28 ml/hour.

A client with septic shock receives a prescription for dextrose 5% in water with dopamine (Intropin) 0.6 grams/250 ml at a rate of 5 mcg/kg/minute. The client's weight is 148 lbs. The nurse should set the infusion pump to deliver how many ml/hour? (Enter numeric value only. If rounding is required, round to the nearest whole number.) - CORRECT ANSWER 8

First convert the weight into kilograms: $148 \text{ pounds} / 2.2 \text{ kg} = 67 \text{ kg}$. Next calculate the number of mcg/kg/minute: $5 \times 67 \times 1 \text{ minute} = 335 \text{ mcg/min}$. Calculate the number of mcg/hour: $335 \times 60 \text{ minutes} = 20,100 \text{ mcg/hour}$. Now calculate the number of ml/hour needed to administer 20,100 mcg/hour: $600,000 \text{ mcg} : 250 \text{ ml} :: 20,100 \text{ mcg} : X$
 $600,000 / 20100 :: 250 / X$
 $600,000X = 5,02500$
 $X = 8.375$ (rounded to) 8 ml/hour.

A client with type 2 diabetes is receiving metformin (Glucophage) 1 gram PO twice daily. The medication is available in 500 mg tablets. How many tablets should the nurse administer? (Enter numeric value only.) - CORRECT ANSWER 2

Using the known equivalent, 1 gram = 1000 mg, the nurse should first convert the dose to the same unit of measurement, which is 1 gram = 1000 mg. Using the formula, $\text{Desired} / \text{Available} \times 1 \text{ tablets}$: $1000 \text{ mg} / 500 \text{ mg} \times 1 = 2 \text{ tablets}$

A client with Mycobacterium avium complex (MAC) is receiving an infusion of 5 % dextrose in water with amikacin (Amikin) 0.572 grams/100 ml every 12 hours. The nurse prepares the dose of amikacin using a vial labeled, 250 mg/ml. How many ml should the nurse add to the infusion? (Enter numeric value only. If rounding is required, round to the nearest tenth.) - CORRECT ANSWER 2.3

First convert gram to milligram: 1 gm = 1000mg .572 gram x 1000 = 572 mg. Next use the formula D/H x Q: $572/250 \times 1 = 2.288$ (rounded to) 2.3 ml.

A client with pericardial effusion has phrenic nerve compression resulting in recurrent hiccups. The healthcare provider prescribes metoclopramide (Reglan) liquid 10 mg PO q 6 hours. Reglan is available as 5 mg/5 ml. A measuring device marked in teaspoons is being used. How many teaspoons should the nurse administer? - CORRECT ANSWER 2

First, using the formula, Desired dose/dose on Hand x Quantity of volume on hand (D/H x Q), $10 \text{ mg} / 5 \text{ mg} \times 5 \text{ ml} = 10 \text{ ml}$. Next using the known conversion of 5 ml = 1 tsp: $5 \text{ ml} : 1 \text{ tsp} :: 10 \text{ ml} : X$ $5 / 10 : 1 / X$ $5X = 10$ $X = 2$

A client is receiving alprazolam (Xanax) 0.75 mg PO BID for anxiety. Alprazolam is available in 0.5 mg scored tablets. How many tablets should the nurse administer? (Enter numeric value only.) - CORRECT ANSWER 1.5

Using the conversion of 1 gram = 1000 mg: 0.1 gram = 100 mg 100 mg = 1 capsule

A client with multiple sclerosis is prescribed Dantrolene (Dantrium) 0.1 grams PO BID for spasticity. Dantrolene is available in 100 mg capsules. How many capsules should the nurse administer? (Enter numeric value only.) - CORRECT ANSWER 1

Using the conversion of 1 gram = 1000 mg: 0.1 gram = 100 mg 100 mg = 1 capsule

A client has a prescription for inamrinone (Inacor) 0.75 mg/kg IV bolus to be delivered over 3 minutes. The client weighs 80 kg. Inamrinone is available for injection 100 mg/20 ml. How many ml of inamrinone should the nurse administer? (Enter numeric value only. If rounding is required, round to the nearest tenth.) - CORRECT ANSWER 12

First calculate the mg/kg dosage needed: $0.75 \text{ mg} \times 80 \text{ kg} = 60 \text{ mg}$ needed. Then calculate Desired / Have x ml $60 \text{ mg} / 100 \text{ mg} \times 20 \text{ ml} = 12 \text{ ml}$.

A client who had mitral valve replacement surgery receives a prescription for dextrose 5% in water with 0.5 grams of dobutamine in 250 ml for IV infusion at a rate of 5 mcg/kg/minute. The client weighs 75 kg. The nurse should program the infusion pump to deliver how many ml/hr? (Enter numeric value only. If rounding is required, round to the nearest tenth.) - CORRECT ANSWER 11.3

First calculate the number of mcg/kg/minute: $5 \times 75 = 375 \text{ mcg/minute}$. Calculate the number of mcg/hour: $375 \times 60 \text{ minutes} = 22,500 \text{ mcg/hour}$. Next calculate the number of ml/hour needed to administer 22,500 mcg/hour: $500,000 \text{ mcg} : 250 \text{ ml} :: 22,500 \text{ mcg} / X \text{ ml} 500,000X = 5,625,000 X = 11.25$ (rounded to 11.3 ml/hour).

A healthcare provider prescribes a continuous infusion of 0.9% sodium chloride with pancuronium (Pavulon) 25 mg/250 ml at a rate of 0.1 mg/kg/hr for a client with coronary artery bypass grafting. The client weighs 78 kg. The nurse should program the infusion pump to deliver how many ml/hour? (Enter numeric value only. If rounding is required, round to the nearest tenth. - CORRECT ANSWER 78

First calculate the number of mg the client will receive in 1 hour: $0.1 \text{ mg} \times 78 \text{ kg} = 7.8 \text{ mg/hour}$. Next calculate the number of ml containing 7.8 mg of medication: $25 \text{ mg} : 250 \text{ ml} :: 7.8 \text{ mg} : X$ $25 \text{ mg} / 7.8 \text{ mg} :: 250 \text{ ml} / X$ $25X = 1950$ $X = 78 \text{ ml/hour}$.

A client scheduled for surgery is to receive an IV infusion of 0.9% sodium chloride with prochlorperazine edisylate (Compazine) 10 mg/50 ml over 30 minutes. The nurse should program the infusion pump to deliver how many ml/hour? (Enter numeric value only.) - CORRECT ANSWER 100

Calculate: $50 \text{ ml} : 30 \text{ minutes} :: X \text{ ml} : 60 \text{ minutes}$ $50/X :: 30/60$ $3000 = 15X$ $X = 100 \text{ ml}$

The healthcare provider prescribes an IV infusion of 0.9% sodium chloride with 40 mEq KCl/500 ml to infuse over 3 hours for a client with hypokalemia. The nurse should program the infusion pump to deliver how many ml/hour? (Enter numeric value only. If rounding is required, round to the nearest whole number.) - CORRECT ANSWER 167

To determine ml/hour: $500 \text{ ml} : 3 \text{ hours} :: X \text{ ml} : 1 \text{ hour}$ $500/X :: 3/1$ $500 = 3X$ $X = 166.66$ (rounds to) = 167 ml/hour.

The healthcare provider prescribes a continuous infusion of 5% dextrose in 0.45% sodium chloride at 85 ml/hour. The IV administration set delivers 10 gtt/ml. The nurse should regulate the drop rate to deliver how many gtt/minute? (Enter numeric value only. If rounding is required, round to the nearest whole number.) - CORRECT ANSWER 14

Volume/Time (minutes) x drop factor (gtt/ml) = $85 \text{ ml} / 60 \text{ minutes} \times 10 \text{ gtt/ml} = 14.16 = 14 \text{ gtt/minute}$

1) A nurse is caring for a client with hyperparathyroidism and notes that the client's serum calcium level is 13 mg/dL. Which medication should the nurse prepare to administer as prescribed to the client? - CORRECT ANSWER 3. calcitonin (Miacalcin)

2.) Oral iron supplements are prescribed for a 6-year-old child with iron deficiency anemia. The nurse instructs the mother to administer the iron with which best food item?

1. Milk
2. Water
3. Apple juice
4. Orange juice - CORRECT ANSWER 4. Orange juice

3.) Salicylic acid is prescribed for a client with a diagnosis of psoriasis. The nurse monitors the client, knowing that which of the following would indicate the presence of systemic toxicity from this medication?

1. Tinnitus
2. Diarrhea
3. Constipation
4. Decreased respirations - CORRECT ANSWER 1. Tinnitus

4.) The camp nurse asks the children preparing to swim in the lake if they have applied sunscreen. The nurse reminds the children that chemical sunscreens are most effective when applied:

1. Immediately before swimming
2. 15 minutes before exposure to the sun

3. Immediately before exposure to the sun

4. At least 30 minutes before exposure to the sun - CORRECT ANSWER 4. At least 30 minutes before exposure to the sun

5.) Mafenide acetate (Sulfamylon) is prescribed for the client with a burn injury. When applying the medication, the client complains of local discomfort and burning. Which of the following is the most appropriate nursing action?

1. Notifying the registered nurse

2. Discontinuing the medication

3. Informing the client that this is normal

4. Applying a thinner film than prescribed to the burn site - CORRECT ANSWER 3. Informing the client that this is normal

6.) The burn client is receiving treatments of topical mafenide acetate (Sulfamylon) to the site of injury. The nurse monitors the client, knowing that which of the following indicates that a systemic effect has occurred?

1.Hyperventilation 2.Elevated blood pressure 3.Local pain at the burn site

4.Local rash at the burn site - CORRECT ANSWER 1.Hyperventilation

7.) Isotretinoin is prescribed for a client with severe acne. Before the administration of this medication, the nurse anticipates that which laboratory test will be prescribed?

1. Platelet count

2. Triglyceride level

3. Complete blood count

4. White blood cell count - CORRECT ANSWER 2. Triglyceride level

8.) A client with severe acne is seen in the clinic and the health care provider (HCP) prescribes isotretinoin. The nurse reviews the client's medication record and would contact the (HCP) if the client is taking which medication?

1. Vitamin A
2. Digoxin (Lanoxin)
3. Furosemide (Lasix)
4. Phenytoin (Dilantin) - CORRECT ANSWER 1. Vitamin A

9.) The nurse is applying a topical corticosteroid to a client with eczema. The nurse would monitor for the potential for increased systemic absorption of the medication if the medication were being applied to which of the following body areas?

1. Back
2. Axilla
3. Soles of the feet
4. Palms of the hands - CORRECT ANSWER 2. Axilla

10.) The clinic nurse is performing an admission assessment on a client. The nurse notes that the client is taking azelaic acid (Azelex). Because of the medication prescription, the nurse would suspect that the client is being treated for:

1. Acne
2. Eczema
3. Hair loss
4. Herpes simplex - CORRECT ANSWER 1. Acne

11.) The health care provider has prescribed silver sulfadiazine (Silvadene) for the client with a partial-thickness burn, which has cultured positive for gram-negative

bacteria. The nurse is reinforcing information to the client about the medication. Which statement made by the client indicates a lack of understanding about the treatments?

1. "The medication is an antibacterial."
 2. "The medication will help heal the burn."
 3. "The medication will permanently stain my skin."
 4. "The medication should be applied directly to the wound." - CORRECT ANSWER
3. "The medication will permanently stain my skin."

12.) A nurse is caring for a client who is receiving an intravenous (IV) infusion of an antineoplastic medication. During the infusion, the client complains of pain at the insertion site. During an inspection of the site, the nurse notes redness and swelling

and that the rate of infusion of the medication has slowed. The nurse should take which appropriate action?

1. Notify the registered nurse.
 2. Administer pain medication to reduce the discomfort.
 3. Apply ice and maintain the infusion rate, as prescribed.
 4. Elevate the extremity of the IV site, and slow the infusion. - CORRECT ANSWER
1. Notify the registered nurse.

13.) The client with squamous cell carcinoma of the larynx is receiving bleomycin intravenously. The nurse caring for the client anticipates that which diagnostic study will be prescribed?

1. Echocardiography
2. Electrocardiography
3. Cervical radiography