2016 Veterinary Science Math Practicum

Perform the calculations and write your answer on the provided answer sheet. Round to the nearest tenth unless directed otherwise in the question.

If an answer is less than 1, your answer must include a leading 0 (zero).

Use the information below to answer Questions #1 - #5

Mrs. Kidd brings in her dog, Killer. Dr. Peelman has diagnosed Killer with a urinary tract infection. She has prescribed SMZ-TMP. Killer is Chow and weighs 70 lbs. The dose is 30 mg/kg once every 12 hours. Killer will need to be treated for 10 days. Each tablet costs $0.75 and there is a one-time dispensing fee of $7.50

Question #1 (2 points)

What is Killer's weight in kilograms?

Question # 2 (2 points)

How many milligrams of sulfamethoxazole is in each tablet?

Question# 3 (5 points)

How many tablets per dose will be given to Killer?

Question# 4 (3 points)

How many tablets will need to be sent home for Killer's entire course of treatment?

Question #5 (3 points)

What is the total medication cost to Mrs. Kidd?

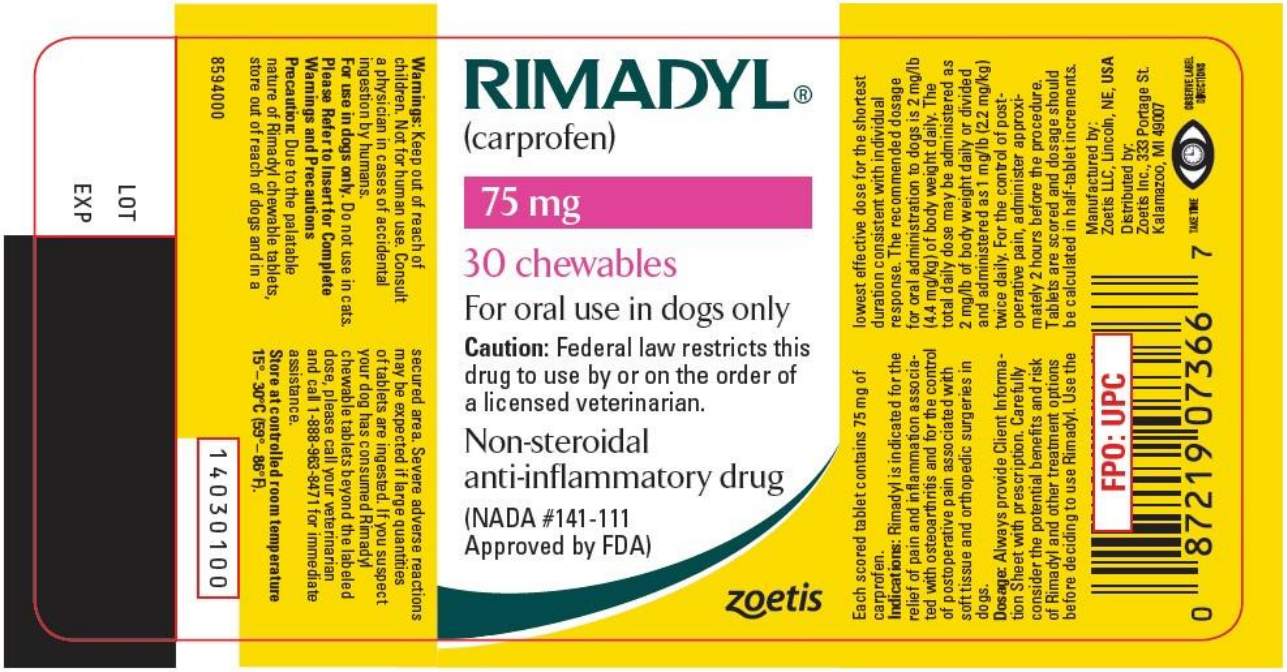
Question #6 (5 points)

Matt brings his newborn foal, Chayleigh in for dehydration. Chayleigh weighs 110 lb. The veterinarian instructs the technician to administer fluids at the rate of 70 ml/kg/24 hours. What is the total volume Chayleigh should receive in 24 hours?

Question #7 (10 points)

From the question above, calculate Chayleigh's rate in drops/minute. Your clinic uses 10 drop/mL drip set for fluid administration. Round to the nearest whole drop.

Use the image below for Questions #8 & #9



Question #8 (5 points)

How many total milligrams are in the bottle?

Question #9 (5 points)

The recommended dose in milligrams for a 12 kg dog is:

Question #10 (5 points)

The Office Manager at Catoctin Veterinary Clinic is ordering supplies for the clinic. She purchases a case of calf colostrum with 12 cartons for $135.00. How much would a customer pay per carton with a 45% markup?

Question #11 (15 pts)

The Ark Animal Hospital offers a 5% discount to clients on services for two or more pets. This discount does not apply to administered or dispensed medications or retail product purchases. Ms. Birch brought in her two dogs: Chester and Mo, and her two cats: Caty Beth and Colton, for their annual physical examinations and vaccinations. Before the discount, the total charges for services and dispensed medication are $652. The annual dose for all for pets (48 doses) of a heartworm preventive drug is $11 per dose. What is the total bill after the discount is applied?

Question #12 (5 pts)

The kennel assistant at Noah's Clinic is instructed to dilute Roccal-D disinfectant to a quart spray bottle. The solution has a dilution of 2 oz to 1 gallon of water. How many milliters of Roccal-D do you mix with a 2 quarts of water? (1 ounce is equivalent to about 30 mL)

Question #13 (5 points)

Bambino brings his 2 kg iguana into the clinic with an infection. The veterinarian instructs the technician to administer an injection of Baytril. Baytril's dosage is 5 mg/lb of body weight per day. How many milliliters of Baytril should the technician administer, if the concentration of the drug is 30 mg/mL? Round your answer to the nearest 10^{th}.

Question #14 (5 points)

Jose was instructed to radiograph a boston terrier's right forelimb to confirm a suspected fracture. He wanted to know what the effect of changing the source to image distance (SID) to half the original distance would affect the amount of x-rays produced which is measured in milliamperage second (mAs). The original mAs was 5, the new SID is 20. What is the new mAs?

Formula: Old mAs x New SID/Old SID= New mAs

Question #15 (10 points)

A dog weighing 40 kg needs to be treated with a drug at a dose rate of 2 mg/lb/day. The solution available is 2%. Calculate the volume in ml of the daily injection to give the correct dose.

Question #16 (2 points)

A 43 pound Australian Shephard is 9% dehydrated. How much is the fluid deficit in mL? Use the formula: Body weight x percent dehydration (decimal) x 500?

Question 17 (13 pts)

For the previous question, using a 10 drop/mL drip set for fluid administration, calculate the drops/second over a 24 hour period