Sample pharmaceutical calculations questions

The following is a sampling of questions typical of those encountered in the Pharmacy Technician Program. Some questions approximate those on the Patient Safety Calculations Assessments in the Program. As per the mandatory criterion for work practicum eligibility of zero tolerance for math errors on these tests, students are expected to perform such calculations error-free.

1. Patient Y.E. has a prescription for citalopram 30 mg once daily for 1 month with 2 refills. The pharmacy technician will fill the prescription using citalopram 20 mg tablets. How many tablets will the technician supply for the month? What is the total quantity of tablets authorized for the prescription?

   Answers: 45 tablets, 135 tablets

2. Patient L.H. has a prescription for amoxicillin 500 mg capsules with the following directions: 2 capsules 3 times daily until finished. If the patient is supplied with 84 capsules, how long will the medication last?

   Answer: 14 days

3. P.S., an 83-year-old female, receives her medication in bubble packs. Her warfarin prescription is as follows: 1 mg daily Monday, Wednesday, Friday and Sunday; 1.5 mg daily Tuesday, Thursday and Saturday. If the 1 mg tablets may be halved to obtain 0.5 mg, how many 1 mg tablets will be needed for a 4-week supply of the bubble packs?

   Answer: 34 tablets

4. P.G. is a 5-year-old child diagnosed with a respiratory infection. She has been prescribed clarithromycin suspension 200 mg bid for 7 days. If the medication is supplied as a 250 mg/5mL suspension, what is the volume in mL P.G. will receive per dose?

   Answer: 4 mL

5. K.W. is a patient in a psychiatric ward. His physician has ordered haloperidol 3.5 mg IM stat. If haloperidol is available in a 5 mg/mL vial, what is the volume in mL that will be administered to K.W.?

   Answer: 0.7 mL

6. Patient G.S. is using insulin to help control his type 2 diabetes. He has been prescribed insulin NPH 17 units each morning and 10 units each night at bedtime. The insulin is supplied to G.S. in 3mL cartridges containing 100 units/mL. If a box of insulin NPH contains 5 cartridges, how long will a box last G.S.?

    Answer: 55 days

7. You are a pharmacy technician tasked with preparing the following compound. What is the quantity (in grams) of each ingredient you will use?
    camphor 1%
    menthol 1.5%
    in betamethasone cream 0.1% qs ad 200 g

    Answer: camphor 2 g, menthol 3 g, betamethasone 0.1% cream 195 g

8. You are a pharmacy technician working in a hospital dispensary. You will be preparing a batch of intravenous medication with the following parameters. How many vials of cefazolin as listed below will be required to prepare the batch?
    cefazolin 1.5 g IV q8h
    supplied: single-use 1 g vials; when reconstituted with 2.5 mL diluent final concentration is 334 mg/mL
    prepare: 2-day supply

    Answer: 9 vials

9. W.W. is a 3-year-old patient for whom the following prescription was written:
    cloxacillin 50 mg/kg/d divided q6h x 10/7

    W.W.'s weight, as written on the prescription, is 38 lb. You will fill the prescription with cloxacillin 125 mg/5mL suspension – available in large stock bottles, therefore you may dispense whatever quantity necessary without regard to pack size. Provide the following information for this situation: quantity (in mg) the patient will receive per dose AND quantity (in mL) you will supply for the duration of the prescription.

    Answers: 215.9 mg, 344 mL

10. O.W. is regular client at your pharmacy. Today he is filling a prescription for a product that will cost $75.36 for the medication plus the pharmacy's $13.95 dispensing fee. If O.W.'s third party insurance plan covers 80% of eligible costs with a maximum of fee of $11.95, what will O.W. be required to pay when picking up the medication?

    Answer: $19.46