Medication Calculation Practice
Six Practice Opportunities With Answers December 18, 2018

1. Administer 100 mg of the medication, IV push
Concentration of the medication is 25 mg/2 mL
The nurse will administer _____ mL, IV push

Answer: The nurse will administer 8 mL
$\frac{100 \text{ mg}}{25 \text{ mg}} \times 2 \text{ mL} = 8 \text{ mL}$

2. Administer 30 mL of the medication, PO
Concentration of the medication is 7.5 mg/1 mL
The nurse will administer _____ mg of the medication, PO

Answer: Administer 225 mg of the medication, PO
$\frac{30 \text{ mL}}{1 \text{ mL}} \times 7.5 \text{ mg} = 225 \text{ mg}$

3. IV Label: 200 mg of ceftriaxone mixed in 50 mL of normal saline
Administer at 200 mL/hour
Medication Reference: Administer a single dose over 30 minutes

The nurse should
A. Administer the medication at 200 mL/hour
B. Contact the pharmacist
C. Contact the provider

Answer: B. Contact the pharmacist. The rate on the label will infuse the medication too fast. At a rate of 200 mL/hour the medication will infuse in 15 minutes. Infuse the medication at a rate of 100 mL/hour. Ask the pharmacist to correct the label to prevent future doses from being administered too fast.
$\frac{50 \text{ mL}}{0.5 \text{ hr}} = 100 \text{ mL/hour}$

4. IVPB Label: 1 gram of medication is mixed in 200 mL of normal saline
Medication Reference: Recommended concentration is 5 mg/mL

The nurse should
A. Administer the medication
B. Contact the pharmacist
C. Contact the provider

Answer: Administer the medication. The concentration in the IVPB matches the manufacturer's recommendation
1,000 mg = 5 mg/mL
200 mL

5. IVPB Label: 10 mg of medication, IV push
Medication Reference:
- 20 mg of medication / 1 mL
- May be administered undiluted; however further dilution with 4 mL to 5 mL of normal saline to facilitate titration is appropriate
- Administer 15 mg or fraction thereof over 5 minutes

The prudent nurse should (Select all that apply)
A. Administer 0.5 mL of the medication undiluted
B. Administer 10 mg mixed in normal saline
C. Administer slow IV push
D. Administer over 5 minutes

Answer: The prudent nurse should mix the dose 0.5 mL in 4 to 5 mL and administer over 5 minutes
10 mg x 1 mL = 0.5 mL
20 mg

Administering 0.5 mL of medication over 5 minutes is extremely difficult, if not impossible. The prudent nurse would mix the medication and enough diluent to equal 5 mL. Five mL is not a magical number; it is a number that is easy to administer over 5 minutes.

The term "faction thereof" when used with rate of administration means anything under. For example, administer 15 mg or fraction thereof over 5 minutes means administer 15 mg or a dose less than 15 mg over 5 minutes.

6. Administer 300 mg of medication mixed in 100 mL of normal saline over 30 minutes.
The nurse will regulate the macrodrip IV tubing (15 gtt/mL) at _____ gtt/minute.

Answer: Administer at 50 gtt/minutes

$$\frac{100 \text{ mL} \times 15 \text{ gtt}}{30 \text{ minutes}} = 50 \text{ gtt/minute}$$