### Module 4: Reconstitution of Solutions - Practice Problems

#### Answers Using the Formula Method

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| **1.** Order: Solu-Cortef 150 mg  
Available: A vial of Solu-Cortef powder  
Directions: Add 1.8mL of sterile water to yield a solution of 250mg/mL  
a. What is the order? 150 mg  
b. What is the available? 250mg/mL  
c. How many mL will be administered? 0.6 mL |  
\[
\frac{150\text{mg}}{250\text{mg}} \times 1\text{mL} = 0.6\text{mL}
\]  
Give 0.6 mL |
| **2.** Order: Claforan 665 mg  
Available: A vial of Claforan powder  
Directions: Reconstitute with 10mL of bacteriostatic water to yield a concentration of 95mg/mL  
a. What is the order? 665 mg  
b. What is the available? 95 mg/mL  
c. How many mL will be administered? 7 mL |  
\[
\frac{665\text{mg}}{95\text{mg}} \times 1\text{mL} = 7\text{mL}
\]  
Give 7 mL |
| **3.** Order: Pfizerpen 1,000,000 units  
Available: A vial of Pfizerpen powder  
Directions: Add 1.6 mL of sterile water to give a concentration of 5,000,000 units/mL  
a. What is the order? 1,000,000 units  
b. What is the available? 5,000,000 units/mL  
c. How many mL will be administered? 0.2 mL |  
\[
\frac{1000000\text{units}}{5000000\text{units}} \times 1\text{mL} = 0.2\text{mL}
\]  
Give 0.2 mL |
| **4.** Order: Streptomycin 0.25g  
Available: A vial of Stroptomycin powder  
Directions: Reconstitute with 9mL of sterile water for a concentration of 400mg/2mL  
a. What is the order? 0.25g  
b. What is the available? 400mg/2mL  
c. How many mL will be administered? 1.3 mL |  
\[
\frac{250\text{mg}}{400\text{mg}} \times 2\text{mL} = 1.25 = 1.3\text{mL}
\]  
Give 1.3 mL |
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| 5. Order: Tazicef 0.6g  
Available: A vial of Tazicef powder  
Directions: Add 10 mL of sterile water. Each mL of solution contains 200mg.  
a. What is the order? **0.6g**  
b. What is the available? **200mg/mL**  
c. How many mL will be administered? **3 mL** | $\frac{600\text{mg}}{200\text{mg}} \times 1\text{mL} = 3\text{mL}$  
Give 3 mL |
| 6. Order: Maxipime 0.75g  
Available: A vial of Maxipime powder  
Directions: Add 2.6mL of sterile water to yield 200mg/2mL  
a. What is the order? **0.75mg**  
b. What is the available? **200mg/2mL**  
c. How many mL will be administered? **7.5 mL** | $\frac{750\text{mg}}{200\text{mg}} \times 2\text{mL} = 7.5\text{mL}$  
Give 7.5 mL |
| 7. Order: Cefadyl 225mg  
Available: A vial of Cefadyl powder  
Directions: Reconstitute with 2mL of sterile water to yield a concentration of 500mg/2mL  
a. What is the order? **225 mg**  
b. What is the available? **500mg/2mL**  
c. How many mL will be administered? **0.9 mL** | $\frac{225\text{mg}}{500\text{mg}} \times 2\text{mL} = 0.9\text{mL}$  
Give 0.9 mL |
| 8. Order: Zovirax 200mg  
Available: A vial of Zovirax powder  
Directions: Add 10mL of sterile water to yield 50mg/0.5mL  
a. What is the order? **200mg**  
b. What is the available? **50mg/0.5mL**  
c. How many mL will be administered? **2 mL** | $\frac{200\text{mg}}{50\text{mg}} \times 0.5\text{mL} = 2\text{mL}$  
Give 2 mL |
| 9. Order: Suprax 200mg  
Available: A vial of Suprax powder  
Directions: Add 70mL of sterile water. Each teaspoon contains 100mg.  
a. What is the order? **200mg**  
b. What is the available? **100mg/tsp**  
c. How many mL will be administered? **10 mL (2 tsp)** | $\frac{200\text{mg}}{100\text{mg}} \times 5\text{mL} = 10\text{mL}(2\text{tsp})$  
Give 10 mL |
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| 10. Order: Ciprofloxacin 375mg  
Available: A vial of Ciprofloxacin powder  
Directions: Add 10mL of sterile water to yield a solution of 37.5mg/mL.  
a. What is the order? **375mg**  
b. What is the available? **37.5mg/mL**  
c. How many mL will be administered? **10 mL** | \[
\frac{375mg}{37.5mg} \times 1mL = 10mL
\]  
Give 10 mL |