



# Math Study Strategies

## Nursing Math

### Intravenous Solutions



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Audio Version  
Approx opening time  
3 min at 56k

The doctor's order reads: **Isuprel** 2mg IV in 500ml D5W at 5mcg per minute. The drop factor is 60gtts per ml. What is the flow rate in ml per hour?

1. Write the given information in ratio form

$$\frac{2mg}{500ml} \quad \frac{5mcg}{min} \quad \frac{60gtts}{ml}$$

2. The problem asks for the flow rate in **ml/hr**. As a result, you should start with the data that contains **ml**.

$$\frac{500ml}{2mg}$$

3. Convert the **unit of measure (ml)** into **mcg**

$$\frac{1mg}{1000mcg} \times \frac{5mcg}{min}$$

4. The problem asks for the **flow rate per hour**, so we must convert the minutes into hours.

$$\frac{5mcg}{min} \times \frac{60min}{hr}$$

5. Using dimensional analysis, we can write:

$$\frac{500ml}{2mg} \times \frac{1mg}{1000mcg} \times \frac{5mcg}{min} \times \frac{60min}{hr}$$

6. Since all the units cancel leaving only **ml/hr** (the desired units), we simply multiply across and then divide to obtain the answer.

$$\frac{150,000}{2,000} = 75 \frac{ml}{hr}$$

