

a. Volume/Time - IV mL Rate Questions (mL to mL)

Volume (mL)	= Y (Flow Rate in mL/hr)
Time (hr)	

Example: Ordered 1000 mL D5W IV to infuse in 10 hours by infusion pump.

Solve: 1000 mL/ 10 hours = 100 mL per hr

Answer: 100 mL/hr

b. Mass/Time - IV mL Rate Questions (mg to mg)

(Desired) Ordered Per Hour 9(mg)	x Volume (mL)	= Y (Flow Rate in mL/hr)
Have (mg)		

Example: Give patient 500 mg of dopamine in 250 mL of D5W to infuse at 20 mg/hr. Calculate the flow rate in mL/hr.

Solve: 20 mg/500 mg x 250 mL = 10 mL/hr

Answer: 10 mL/hr

c. Volume/Time - IV Drop Rate Questions (mL to min x gtt factor)

Volume (mL)	x Drop Factor (gtts/mL) = Y (Flow Rate in gtts/min)
Time (min)	

Example: Calculate the IV flow rate for 200 mL of 0.9% NaCl IV over 120 minutes. Infusion set has drop factor of 20 gtts/mL.

Solve: 200 mL/120 min x 20 gtts per mL = 33.3 gtts/min

Answer: 33.3 gtts/min

d. Volume/Time - IV Drop Rate Questions

Administer 75 milliliter (mL) intravenous piggyback (IVPB) of ceftriaxone over 30 minutes. The nurse will set the IV pump at how many mL/hour?

Solve: 75 mL x 2 (30-minute time frames) = 150 mL/hour.

Answer: 150 mL/hour

e. Total Volume IV fluids, interrupted:

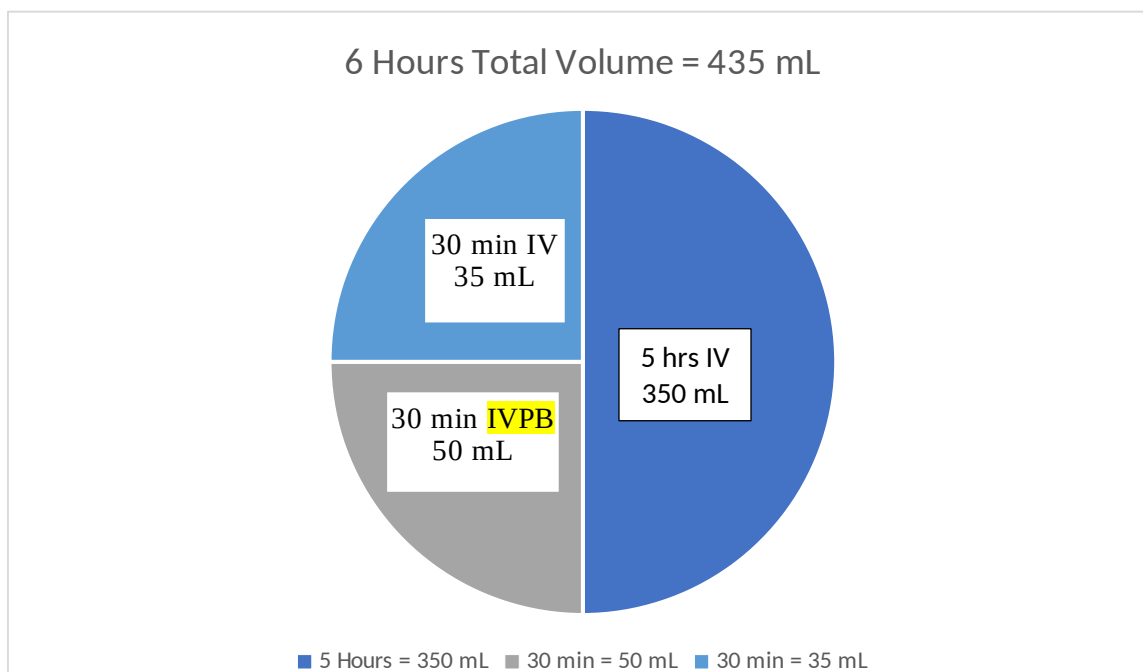
An IV is infusing at 70 mL/hour from 0800 to 1400. At 1200, the patient will receive IVPB of 50 mL for 30 minutes. Calculate the patient's total intravenous fluid intake in millimeters.

To Solve:

From 0800 to 1400 = 6 hours

For 6 hours the pt would receive 420 mL ($70 \text{ mL} \times 6 \text{ hrs} = 420 \text{ mL}$) if it wasn't interrupted. But, another medicine is going to run in during one of those 6 total hours; therefore, the true uninterrupted volume is 350 mL ($70 \text{ mL} \times 5 \text{ hrs} = 350 \text{ mL}$).

At noon (1200), there is another medicine via IVPB that will infuse for 30 minutes at a rate of 50 mL and now the patient's total volume has increased to 400 mL ($350 \text{ mL} + 50 \text{ mL}$). For the remaining 30 minutes of that hour, the patient will receive 35 mL (last half of the 70 mL per hour) for a total volume of 435 mL for the 6 hours.



Answer = 435 mL for the 6 hours