

**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 ? mL/hour

**Solve:** 75 mL x 2 – 30 minute time frames = 150 mL/hour.

**Answer:** 150 mL/hour

**e. Total Volume IV fluids, interrupted**

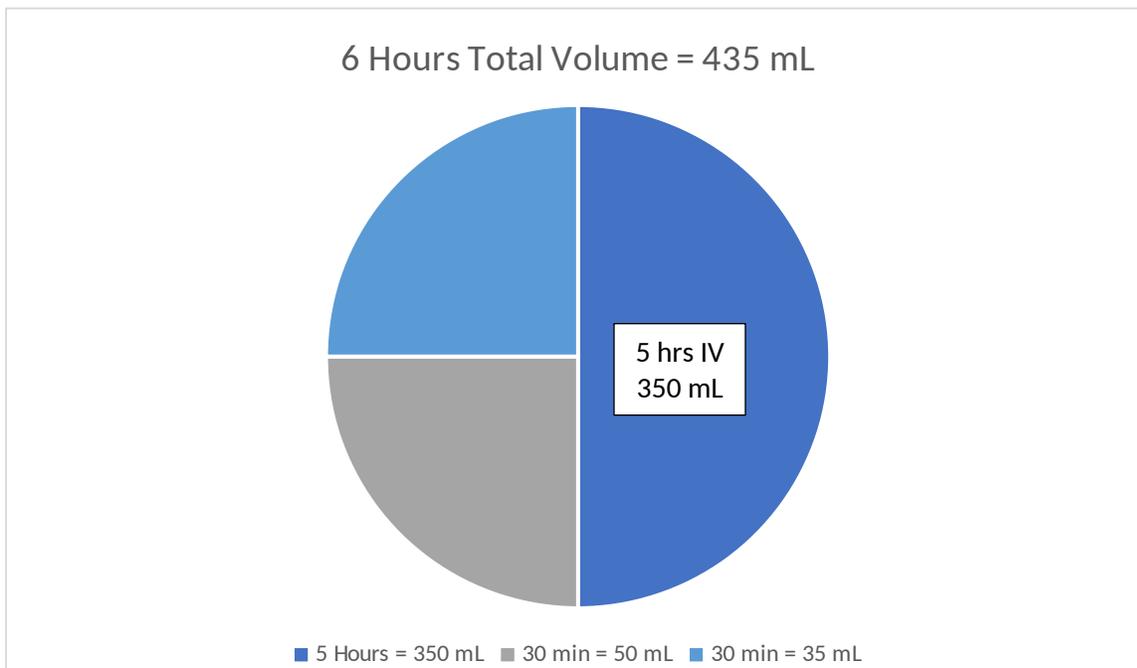
An IV is infusing at 70 mL/hour from 0800 to 1400. At 1200, the patient will receive IVPB of 50 mL for 30 minutes. Calculate the patient's total intravenous fluid intake as ? millimeters.

**Solve:**

**From 0800 to 1400 = 6 hours**

**For 6 hours the pt would receive 420 mL (70 mL x 6 hrs = 420 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 mL x 5 hrs = 350 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 mL + 50 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

