

◦ 500 mL NS 75 mL/hr } ordered hourly rate

$$\text{hr} = \frac{1 \text{ hr}}{75 \text{ mL}} \cdot 500 \text{ mL} = 6 \text{ hr } 40 \text{ min}$$

◦ 600 mL D5W 20 gtt/min } infusion time when rate is not indicated

$$\text{hr} = \frac{1 \text{ hr}}{60 \text{ min}} \cdot \frac{1 \text{ min}}{20 \text{ gtt}} \cdot \frac{20 \text{ gtt}}{1 \text{ mL}} \cdot 600 \text{ mL} = 10 \text{ hours}$$

◦ 32 gtt/min 15 gtt/mL 160 mL } solving w/ unknown element

$$\text{hr} = \frac{1 \text{ hr}}{60 \text{ min}} \cdot \frac{1 \text{ min}}{32 \text{ gtt}} \cdot \frac{15 \text{ gtt}}{1 \text{ mL}} \cdot 160 \text{ mL} = 1 \text{ hr } 15 \text{ min}$$

◦ 1000 mL 125 mL/hr

$$\text{hr} = \frac{1 \text{ hr}}{125 \text{ mL}} \cdot 1000 \text{ mL} = 8 \text{ hr}$$

◦ 750 mL 15 gtt/min 15 gtt/mL } Practice problems

$$\text{hr} = \frac{1 \text{ hr}}{60 \text{ min}} \cdot \frac{1 \text{ min}}{15 \text{ gtt}} \cdot \frac{15 \text{ gtt}}{1 \text{ mL}} \cdot 750 \text{ mL} = 12.5 \text{ hr}$$

◦ 500 mL 60 gtt/min 20 gtt/mL

$$\text{hr} = \frac{1 \text{ hr}}{60 \text{ min}} \cdot \frac{1 \text{ min}}{60 \text{ gtt}} \cdot \frac{20 \text{ gtt}}{1 \text{ mL}} \cdot 500 \text{ mL} = 2 \text{ hr } 46 \text{ min}$$

◦ 50 gtt/min 15 gtt/mL 3 hour

$$\text{mL} = \frac{1 \text{ mL}}{15 \text{ gtt}} \cdot \frac{50 \text{ gtt}}{1 \text{ min}} \cdot \frac{60 \text{ min}}{1 \text{ hr}} \cdot 3 \text{ hours} = 600 \text{ mL}$$

◦ Safe administration:

- medication compatibility
- time over administration
- dilution if needed
- Assess IV site
- follow protocols
- check IV route
- dose calc

- 10 mg 20mg/mL + 5mL

$$\text{mL} = \frac{1\text{mL}}{20\text{mg}} \cdot 10\text{mg} = 0.5 + 5 = 5.5\text{mL}$$

- 40 mg 40mg / 2mL 4min

$$\text{mL} = \frac{2\text{mL}}{40\text{mg}} \cdot 40\text{mg} = 2\text{mL} \quad 2/4 = 0.5 \text{ mL/min}$$

- 500 mL 100 mL/hr

$$\text{hr} = \frac{1\text{hr}}{100\text{mL}} \cdot 500\text{mL} = 5\text{hr}$$

- 250 mL 40 mL/hr

$$\text{hr} = \frac{1\text{hr}}{40\text{mL}} \cdot 250\text{mL} = 6.25\text{hr}$$

- 1200 mL 60 gtt/min

$$\text{hr} = \frac{1\text{hr}}{60\text{min}} \cdot \frac{1\text{min}}{60\text{gtt}} \cdot \frac{60\text{gtt}}{1\text{mL}} \cdot 1200\text{mL} = 20\text{hr}$$

- 80 gtt/min 10 gtt/mL 1500 mL

$$\text{hr} = \frac{1\text{hr}}{60\text{min}} \cdot \frac{1\text{min}}{80\text{gtt}} \cdot \frac{10\text{gtt}}{\text{mL}} \cdot 1500\text{mL} = 6\text{hr } 8\text{min}$$

◦ 30 gtt/min 15gtt/mL 2hr

$$\text{mL} = \frac{1\text{mL}}{15\text{gtt}} \cdot \frac{30\text{gtt}}{1\text{min}} \cdot \frac{60\text{min}}{1\text{hr}} \cdot 2\text{hr} = 240\text{mL}$$

◦ 350mL 15gtt/min 10 gtt/mL

$$\text{hr} = \frac{1\text{hr}}{60\text{min}} \cdot \frac{1\text{min}}{15\text{gtt}} \cdot \frac{10\text{gtt}}{1\text{mL}} \cdot 350\text{mL} = 3\text{hr } 53\text{min}$$

◦ 2mg 2mg/mL + 9mL

$$2\text{mg} / 10\text{mL} \rightarrow 1/5$$

◦ 2mg 2mg/4 mL 2min

◦ 50mg / 20mL =

◦ 0.4mg/mL

◦ 50mg/7mL \rightarrow 7.14mg/mL