



Calculations – Infusion Calculations

Chapter 6 Worksheet H - Answered

Milliliters per Hour

$$F = \frac{\text{mL}}{\text{hr}}$$

Milliliters per Minute

$$f = \frac{F \times C}{60} \quad \text{where: } C = \text{Calibration Factor (gtts/mL)}$$

Infusion Time

$$T_{(\text{hrs})} = \frac{\text{Volume (mL)}}{F(\text{mL/hr})}$$

Infusion Volume

$$V = T \times F$$

- 1) Calculate flow rate (mL/hr) for 3L of D5W being delivered over 24 hours.
- 100 mL/hr
 - 125 mL/hr
 - 150 mL/hr
 - 200 mL/hr
- 2) Calculate flow rate (mL/hr) for 4.8L of D10W being delivered over 2 days.
- 100 mL/hr
 - 125 mL/hr
 - 150 mL/hr
 - 200 mL/hr
- 3) Calculate flow rate (gtts/min) for 3L of D5W being delivered over 24 hours. (The calibration factor of the tubing is 20 gtts/mL)
- 20.52 gtts/min
 - 41.67 gtts/min
 - 50.25 gtts/min
 - 60.67 gtts/min
- 4) Calculate flow rate (gtts/min) for 250mL of KCl being delivered over 2 hours. (The calibration factor of the tubing is 30 gtts/mL)
- 43.8 gtts/min
 - 52.5 gtts/min
 - 62.5 gtts/min
 - 74.8 gtts/min
- 5) Calculate flow rate (mL/hr) for 1.5 L of Ringer's lactate being delivered over 48 hours.
- 31.25 mL/hr
 - 62.5 mL/hr
 - 125 mL/hr
 - 250 mL/hr
- 6) Calculate flow rate (mL/hr) for 500 mL of Normal Saline being delivered over 1.5 days.
- 5.28 mL/hr
 - 11.46 mL/hr
 - 13.89 mL/hr
 - 17.57 mL/hr
- 7) Calculate flow rate (gtts/min) for 1.5 L of Ringer's lactate being delivered over 8 hours. (The calibration factor of the tubing is 15 gtts/mL)
- 24.587 gtts/min
 - 44.785 gtts/min
 - 44.825 gtts/min
 - 46.875 gtts/min
- 8) Calculate flow rate (gtts/min) for 1 pt of Normal Saline being delivered over 12 hours. (The calibration factor of the tubing is 40 gtts/mL)
- 26.28 gtts/min
 - 32.54 gtts/min
 - 49.99 gtts/min
 - 62.75 gtts/min

$$\frac{1 \text{ day}}{24 \text{ hrs}} = \frac{1.5 \text{ days}}{X \text{ hrs}}$$

x=36hrs



- 9) Calculate flow rate (gtts/min) for 750mL of 0.225% NS being delivered over 24 hours. (The calibration factor of the tubing is 60 gtts/mL)

a. 31.25 gtts/min

b. 62.5 gtts/min

c. 125 gtts/min

d. 137.25 gtts/min

$$\frac{1\text{hr}}{60\text{mins}} = \frac{x\text{ hr}}{45\text{ mins}}$$
$$x=0.75\text{hr}$$

- 10) Calculate flow rate (gtts/min) for 30mL of 0.45% NS being delivered over 45 minutes. The calibration factor of the tubing is 30 gtts/mL)

a. 80 gtts/min

b. 60 gtts/min

c. 40 gtts/min

d. 20 gtts/min

- 11) Calculate flow rate (gtts/min) for 0.3 L of KCl being delivered over 10 hours. The calibration factor of the tubing is 30 gtts/mL)

a. 60 gtts/min

b. 45 gtts/min

c. 30 gtts/min

d. 15 gtts/min

$$\frac{1\text{hr}}{60\text{mins}} = \frac{x\text{ hr}}{30\text{mins}}$$
$$x=0.5\text{hr}$$

- 12) Calculate flow rate (gtts/min) for 120 mL of 0.45% NS being delivered over 30 minutes. The calibration factor of the tubing is 10 gtts/mL)

a. 40 gtts/min

b. 30 gtts/min

c. 20 gtts/min

d. 10 gtts/min

- 13) How many hours would it take to infuse 450 mL of NS at a rate of 25 mL/hr?

a. 18 hrs

b. 27 hrs

c. 36 hrs

d. 45 hrs

- 14) How many mL would be needed to infuse at 25 mL/hr for 10.5 hrs?

a. 2.43 mL/hr

b. 262.5 mL/hr

c. 2.86 mL/hr

d. 274.3 mL/hr

$$\frac{1\text{pt}}{473\text{mL}} = \frac{0.5\text{pt}}{x\text{mL}}$$
$$x=236.5$$

- 15) Calculate flow rate (gtts/min) for 0.5 pt of ¼ NS being delivered over 12 hours. The calibration factor of the tubing is 15 gtts/mL)

a. 4.927 gtts/min

b. 5.215 gtts/min

c. 6.378 gtts/min

d. 7.645 gtts/min

- 16) Calculate flow rate (gtts/min) for 5 L of D10W being delivered over 3 days. The calibration factor of the tubing is 25 gtts/mL)

a. 25.36 gtts/min

b. 26.47 gtts/min

c. 27.58 gtts/min

d. 28.94 gtts/min

$$\frac{1\text{hr}}{60\text{mins}} = \frac{x\text{ hr}}{90\text{ mins}}$$
$$x=1.5\text{hr}$$

- 17) Calculate flow rate (gtts/min) for 250 mL of APAP being delivered over 90 mins. The calibration factor of the tubing is 10 gtts/mL)

a. 25.42 gtts/min

b. 26.57 gtts/min

c. 27.78 gtts/min

d. 29.99 gtts/min

- 18) If an infusion of 1 L at 125 mL/hr began at 7pm on Wednesday, when would it be completed?

a. 3 am on Thursday

b. 6 am on Thursday

c. 12 am on Thursday

d. None of the above