



## Infusion Rate - Worksheet

Infusion rate is calculated to find out the volume (in ml) of the concentration that is given to the patient per hour, given the total volume and the total period of time. To solve these problems, you need knowledge about **unit conversion, long division, long multiplication, fractions, and decimals**.

Formula:

$$\text{Infusion Rate (ml/hr)} = \frac{\text{Volume (ml)}}{\text{Time (hr)}}$$

Example

The total volume to be given is 400 ml. The time over which this is to be given is 2 hours. How many ml per hour would you give?

Answer

Total volume: 400ml

Period of time: 2hr

$$\text{Infusion Rate (ml/hr)} = \frac{400\text{ml}}{2 \text{ hr}} = 200 \text{ ml/hr}$$

### Considering unit conversion

The infusion rate is calculated in ml/hr. Hence, before putting the numbers into the formula, the volume and time units need to be converted into millilitres and hours respectively.

Example

The total volume to be given is 2.5 L. The time over which this is to be given is 8 hours. How many ml per hour would you give?

Answer

The volume is given in litres which needs to be converted in mls.

2.5L = (2.5 X 1000) ml = 2500ml

$$\text{Infusion Rate (ml/hr)} = \frac{2500\text{ml}}{8 \text{ hr}} = 312.5 \text{ ml/hr}$$



### Example

The total volume to be given is 175ml. The time over which this is to be given is 90 minutes. How many mls per hour would you give?

### Answer

The time unit needs to be converted from minutes to hours. 1hr=60 mins.

90mins= (90÷60) hr =1.5 hr

$$\text{Infusion Rate (ml/hr)} = \frac{175\text{ml}}{1.5 \text{ hr}} = 116.67 \text{ ml/hr}$$

## **Practice Exercises**

### **Question 1**

The total volume to be given is 650 ml. The time over which this is to be given is 4 hours. How many mls per hour would you give?

### **Question 2**

The total volume to be given is 800 ml. The time over which this is to be given is 360 minutes. How many mls per hour would you give?

### **Question 3**

The total volume to be given is 3 L. The time over which this is to be given is 24 hours. How many mls per hour would you give?

### **Question 4**

The doctor orders 1.2L of 0.9% Normal Saline over 18 hours. How many mls per hour would you give?