

I think it helps to see the big picture on these problems. You are starting with a rate of 4 mg/kg/h and have to change that to gtts/min. You are given the patient's weight along with several ratios which you will use to change the units of the given into the units of the answer.

This is how I did it.

Start by setting up the problem with the starting and ending rates. Note that 4 mg/kg/h is mathematically equivalent to 4 mg/kg*h.

$$\frac{4 \text{ mg}}{\text{kg h}} = \frac{\text{gtt}}{\text{min}}$$

You can now see that you have to change mg to gtts, hours to minutes, and get rid of kg.

Right off the bat you can eliminate kg by inserting the patient's weight into the equation. You will change h to min by using the conversion factor of 1 h/60 min.

$$\frac{4 \text{ mg}}{\text{kg h}} \left(\frac{25 \text{ kg}}{1} \right) \left(\frac{1 \text{ h}}{60 \text{ min}} \right) = \frac{\text{gtt}}{\text{min}}$$

Now you are at mg/min, getting close. You just have to change mg to gtts. You know that there are 1000 mg/500 mL, so that ratio will be used to change mg to mL. There are 15 gtt/mL, so that ratio will change mL to gtts.

$$\frac{4 \text{ mg}}{\text{kg h}} \left(\frac{25 \text{ kg}}{1} \right) \left(\frac{1 \text{ h}}{60 \text{ min}} \right) \left(\frac{500 \text{ mL}}{1000 \text{ mg}} \right) \left(\frac{15 \text{ gtts}}{\text{mL}} \right) = \frac{\text{gtt}}{\text{min}}$$

Now you check everything over making sure the unwanted units are toast and you end up with the desired units.

Do the calculations and you end up with 12.5 gtts/min which would be rounded to 13 gtts/min.