

Infusion Example Calculation

1. Determine the infusion for a 32 lb dog that is 9 % dehydrated.

Compute the replacement volume at 1 liter per 1 kilogram. The dehydration rate is reported as a decimal percent (9% = 0.09).

$$\frac{32 \text{ lb}}{1} \times \frac{1 \text{ kg}}{2.2 \text{ lb}} \times \frac{0.09}{1} \times \frac{1 \text{ L}}{1 \text{ kg}} \times \frac{1000 \text{ ml}}{1 \text{ L}} = \frac{2880}{2.2} = \underline{1309.09 \text{ ml replacement volume}}$$

Compute the maintenance volume at 40 ml per 1 kilogram.

$$\frac{32 \text{ lb}}{1} \times \frac{1 \text{ kg}}{2.2 \text{ lb}} \times \frac{40 \text{ ml}}{1 \text{ kg}} = \frac{1280}{2.2} = \underline{581.82 \text{ ml maintenance volume}}$$

Compute the total volume by adding the replacement and maintenance volume together.

$$1309.09 \text{ ml replacement volume} + 581.82 \text{ ml maintenance volume} = \underline{1890.91 \text{ ml total volume}}$$

Compute the milliliters per minute infusion rate by dividing the total volume by 24 hours and 60 minutes.

$$\frac{1890.91 \text{ ml}}{24 \text{ hr}} \times \frac{1 \text{ hr}}{60 \text{ min}} = \underline{1.31 \text{ ml / min}}$$

Compute the drips per minute infusion rate by dividing the total volume by 24 hours and 60 minutes. If the animal is less than 20 lbs body weight, we will use 60 drips per milliliter. If the animal is more than 20 lbs body weight, we will use 15 drips per milliliter.

$$\frac{1.31 \text{ ml}}{1 \text{ min}} \times \frac{15 \text{ drips}}{1 \text{ ml}} = \underline{19.65 \text{ drips / min}}$$

Compute the anesthesia / surgery rate by multiplying the animal's body weight by 4 ml per hour and dividing by 60 minutes.

$$\frac{32 \text{ lb}}{1} \times \frac{4 \text{ ml}}{1 \text{ hr} | 1 \text{ lb}} \times \frac{1 \text{ hr}}{60 \text{ min}} = \underline{2.13 \text{ ml / min}}$$