

4. There is 25% dextrose solution
and 50% dextrose solution
need to make dextrose solution that is 40%
from the two solutions

We have the volume of 50% dextrose
that is needed is 300 fl oz

We need the volume of 25% dextrose solution

Let the volume of the needed 25% to be x

This gives us the equation

$$0.25(x) + 0.50(300 \text{ fl oz}) = 0.4(300 + x)$$

$$0.25x + 150 = 120 + 0.4x$$

$$0.4x - 0.25x = 150 - 120$$

$$\begin{array}{r} 0.15x = 30 \\ \hline 0.15 \end{array}$$

$$x = \underline{\underline{200 \text{ fluid ounce}}}$$

Therefore 200 fluid ounce of 25% dextrose solution
is need

12. 8 mL of a solution has 5 mL of a drug
we can find percentage composition as follows:

$$\frac{5}{8} \times 100 = 62.5\%$$

In 28 mL of the solution, the percentage composition of the drug will still be 62.5%

Therefore the volume that is the drug will be:

$$\frac{62.5}{100} \times 28 \text{ mL} = \underline{\underline{17.5 \text{ mL}}}$$

13. 400 fl oz contains 36 fl oz of a liquid drug
Therefore, the amount of the solution that is not the drug = $400 - 36$

$$= 364 \text{ fl oz}$$

$$\text{its percentage} = \frac{\text{dr volume}}{\text{Total volume}} \times 100 = \frac{364}{400} \times 100$$

$$= \underline{\underline{91\%}}$$

14. In March, Ben's cholesterol was 220
In November, it had dropped to 187
drop = $220 - 187$

$$= 33$$

$$\text{percentage drop} = \frac{\text{drop count}}{\text{initial count}} \times 100$$

$$= \frac{33}{220} \times 100 = \underline{\underline{15\%}}$$