

$$F \times l \times \phi = \mu \times \sqrt{T}$$

$$220 \times 0.49 \times \phi = \mu \times \sqrt{9}$$

$$220 \times 0.49 \times \phi = \mu \times 3$$

$$\frac{220 \times 0.49}{3} = \left(\frac{\mu}{\phi} \right) \rightarrow \text{constant for the given string} = \underline{\underline{35.93}}$$

$$\frac{220 \times 0.49}{35.93} = 3 \leftarrow \text{we want the tension to remain similar}$$

$$\frac{330 \times 0.425}{35.93} = \underline{\underline{3.90}} \quad \triangle$$

$$\frac{330 \times 0.425}{3} = 46.75 \rightarrow \text{the string we ideally need}$$

$$(3.90)^2 = \underline{\underline{15 \text{ kg}}} \quad \triangle$$

$$(8 \text{ kg})^2 = 2.8284$$

$$\frac{\mu}{\phi} = 38.11$$

$$(3.68)^2 = \underline{\underline{13.54}} \quad \triangle \text{ kg}$$