

Answer on Question#37211 – Math – Trigonometry

How many centimeters will the weight be suspended on a pulley rise if the pulley is 11.5cm in radius is rotated through an angle of  $70^{\circ}45'$ ?

**Solution:**

$\varphi = 70^{\circ}45'$  – angle of the rotation;

$R = 11.5\text{cm}$  – radius of the pulley;

Formula for the suspension of the weight (circle-segment length):

$$h = 2\pi R \cdot \frac{\varphi}{180^{\circ}} = 2\pi \cdot 11.5\text{cm} \cdot \frac{70^{\circ}45'}{180^{\circ}} = 28.4\text{cm}$$

**Answer:** weight will be suspended by 28.4cm.