

Question #32543

150 N force act on the 10 cm long spanner to open the nut. how much distance is required to open same nut with 60 N force.

Solution:

According to the law of lever the moment of force in order to open the nut is constant

$$F_1 * L_1 = F_2 * L_2$$

Let

$$F_1 = 150 \text{ N}$$

$$L_1 = 10 \text{ cm}$$

$$F_2 = 60 \text{ N}$$

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$$L_2 = ?$$

Then

$$L_2 = \frac{F_1 * L_1}{F_2}$$

$$L_2 = \frac{150 * 10}{60} = 25 \text{ cm}$$

**Answer: 25 cm.**