

Mathematics Questions by Topics

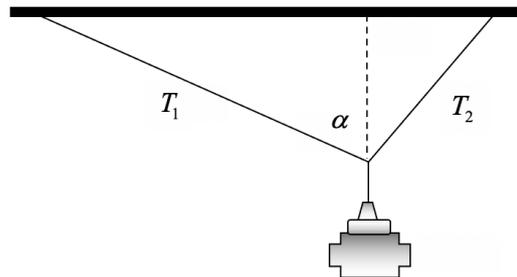
Motion and Force

Question 28

Source: K12SM2Q17

Question 28

An engine weighing 5 kg is suspended by two ropes at right angles to one another, which support tensions of T_1 and T_2 newtons. The rope supporting a tension of T_1 makes an angle of α to the vertical as shown in the diagram below.



Then,

- A. $T_1 = 5 \sin(\alpha)$ and $T_2 = 5 \cos(\alpha)$
- B. $T_1 = 5 \cos(\alpha)$ and $T_2 = 5 \sin(\alpha)$
- C. $T_1 = 5 \tan(\alpha)$ and $T_2 = \frac{5}{\tan(\alpha)}$
- D. $T_1 = 49 \sin(\alpha)$ and $T_2 = 49 \cos(\alpha)$
- E. $T_1 = 49 \cos(\alpha)$ and $T_2 = 49 \sin(\alpha)$