

Mathematics Questions by Topics

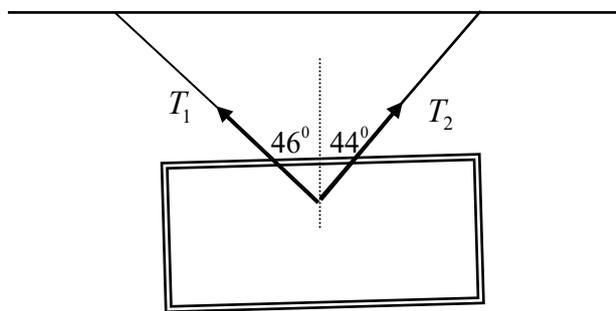
Motion and Force

Question 43

Source: K8SM2Q14

Question 43

A painting of mass one kilogram is to be hung on a wall using two light strings. Unfortunately the painting is not quite horizontal. One string makes an angle of 46° with the vertical and has a tension of magnitude T_1 newtons. The other string makes an angle of 44° with the vertical and has a tension of magnitude T_2 newtons, as shown in the diagram below.



Which of the following is true?

- A. $\frac{T_1}{T_2} = \tan(44^\circ)$
- B. $\frac{T_1}{T_2} = \tan(46^\circ)$
- C. $T_1 + T_2 = g$
- D. $T_1^2 + T_2^2 = g^2$
- E. $T_1 = T_2$