

QUESTION



The beam is of length L and the weight is W . The system is in equilibrium. Determine the reaction forces at the supports.

Assume the beam is uniform and the pulleys are frictionless.

Let R_L be the reaction force at the roller support and R_R be the reaction force at the pin support.

Write the equilibrium equations for the beam and the weight.

Use the equilibrium equations to solve for R_L and R_R .

Express your answers in terms of L and W .

ANSWER

The reaction forces are $R_L = \frac{2}{3}W$ and $R_R = \frac{1}{3}W$.

Section 1

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