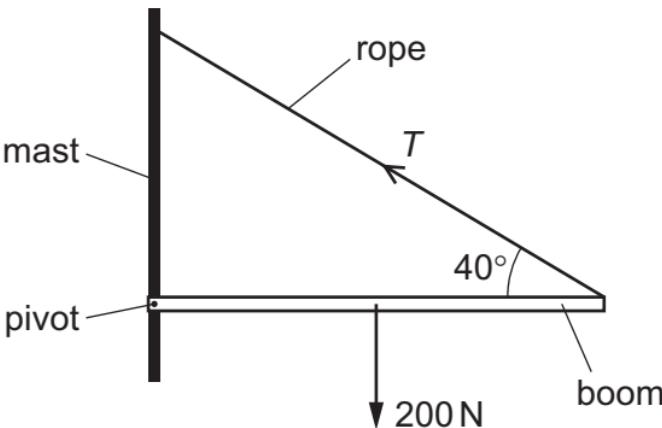


- 12 Two parts of a sailing boat are the mast and the boom. The mast is a vertical rigid beam and the boom is a horizontal rigid beam. One end of the boom is attached to the mast by a pivot. The other end of the boom is connected to the mast by a rope, as shown.



The rope is at an angle of 40° to the horizontal and exerts a tension force T on the boom. The weight of the boom is 200 N . The mass of the boom is uniformly distributed along its length. The boom is in equilibrium.

What is the magnitude of T ?

A 130 N

B 160 N

C 260 N

D 310 N