



Two wires  $AC$  and  $BC$  are attached to the top of pole  $CD$ . The force exerted by the pole at  $C$  is vertical and the  $2.5 \text{ kN}$  force applied at  $C$  is horizontal and makes an angle  $\alpha$  with the direction of the  $x$ -axis.

Find the angle  $\alpha$  for which the tension in  $AC$  is a maximum and the corresponding tension in each cable.