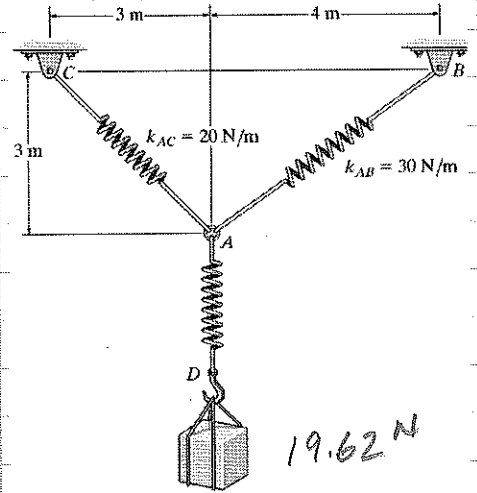


PROBLEM AP-12

GIVEN:

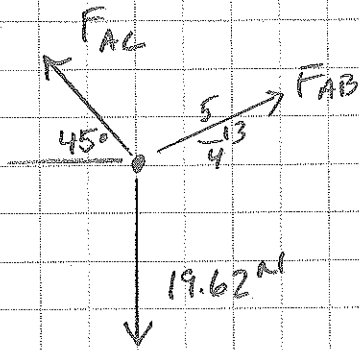
Determine the stretch in springs AC and AB for equilibrium of the 2-kg block. The springs are shown in the equilibrium position.



REQUIRED:

$S_{AC} = ?$
 $S_{AB} = ?$

SOLUTION:



$\rightarrow + \Sigma F_x = 0: \frac{4}{5} F_{AB} - F_{AC} \cos 45 = 0$

$\downarrow + \Sigma F_y = 0: 19.62 \text{ N} - \frac{3}{5} F_{AB} - F_{AC} \sin 45 = 0$

$F_{AB} = 14.0 \text{ N} \quad F_{AC} = 15.9 \text{ N}$

$F = kS \quad S = \frac{F}{k}$

$S_{AB} = 0.467 \text{ m}$

$S_{AC} = 0.795 \text{ m}$

$S_{AB} = 0.47 \text{ m}$
 $S_{AC} = 0.80 \text{ m}$