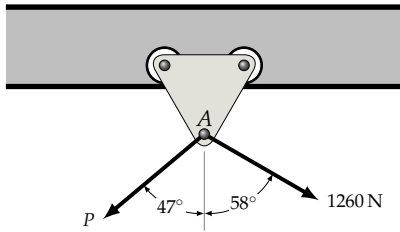# Engineering Statics - 03 Equilibrium of a Particle / Concurrent Forces Handout
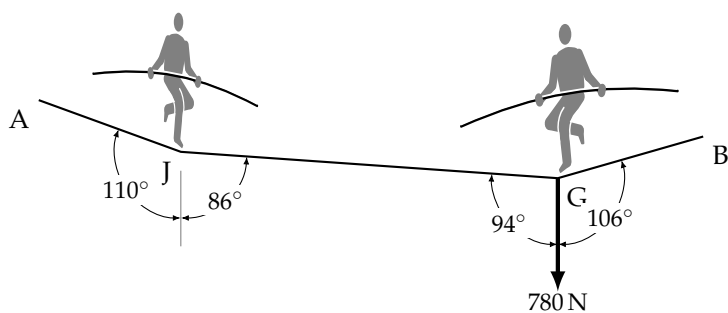
Exercise 1

The trolley can move freely along the horizontal beam on frictionless rollers. Currently, it is in equilibrium. Determine the reaction at A..
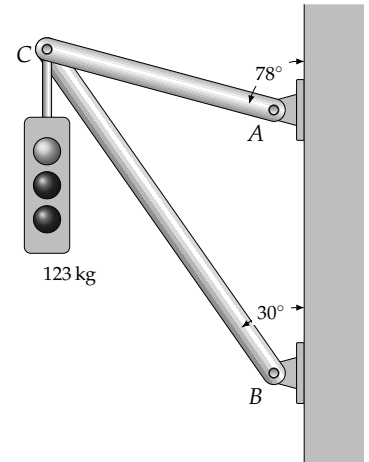
Exercise 2

Jacques and Gilles are high-wire artistes. Gille weighs 780 N.
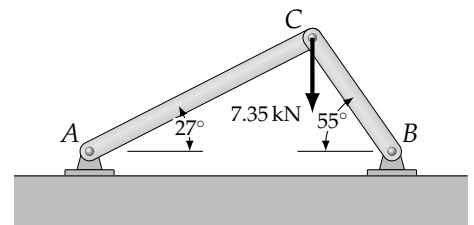How much does Jacques weigh?

A

B

110° J

86°

94° G 106°

780 N

Example 3

Determine the internal forces in members AC and BC.
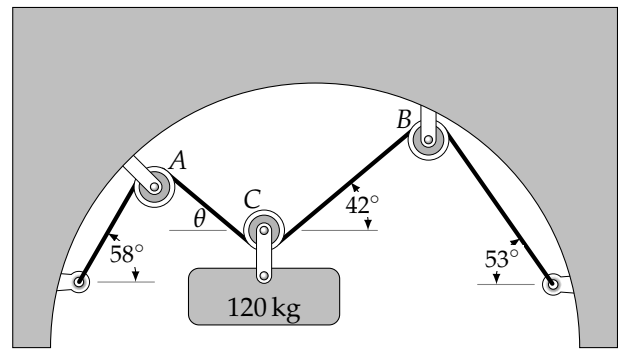Specify whether they are in tension or compression.

Exercise 3

Determine the internal forces in members AC and BC.
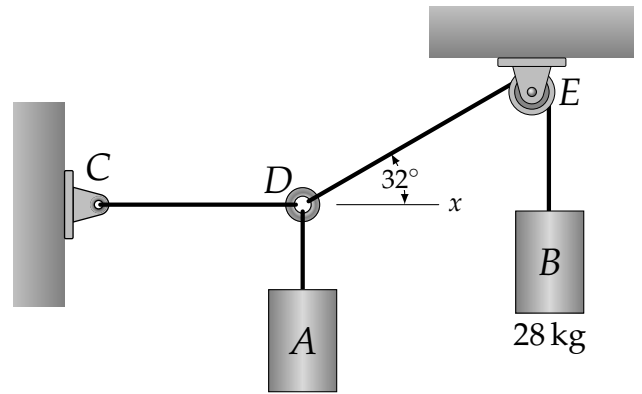Specify whether they are in tension or compression.

Example 4

Determine θ. Then find the tension in the rope and the pulley reaction at B due to the suspended mass.
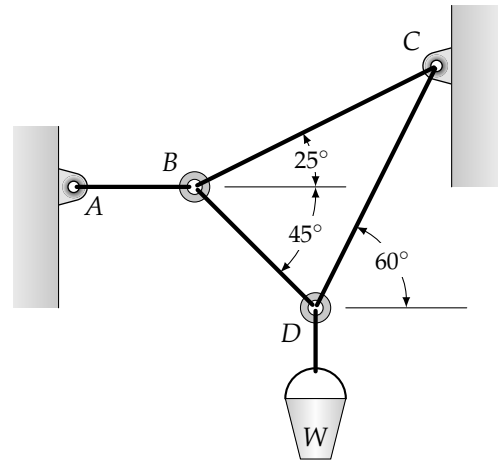
Exercise 4

Cylinder B has a mass of 28 kg. The system is in equilibrium. Determine the mass of A and the reactions at C and E.

Example 5

Determine the maximum weight W of the bucket that the system can support given that no single wire may support more than 450 N. Determine R_C, the reaction at C, for this value of W.

Exercise 5

The tension in cable AC is 400 N. Determine the force F necessary to hold the ring A in the position shown..