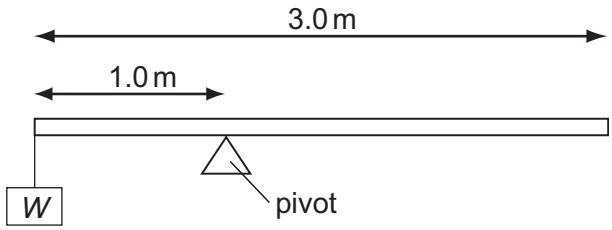
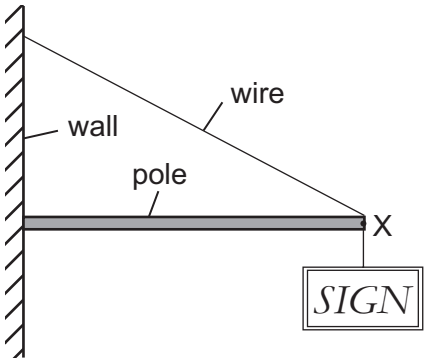
13 A uniform beam of weight 50 N is 3.0 m long and is supported on a pivot situated 1.0 m from one end. When a load of weight *W* is hung from that end, the beam is in equilibrium, as shown in the diagram.



What is the value of *W*?

A 25 N **B** 50 N **C** 75 N **D** 100 N

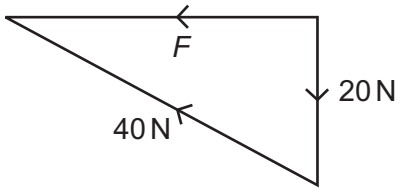
14 The diagram shows a sign of weight 20 N suspended from a pole, attached to a wall. The pole is kept in equilibrium by a wire attached at point X of the pole.



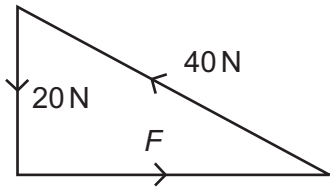
The force exerted by the pole at point X is *F*, and the tension in the wire is 40 N.

Which diagram represents the three forces acting at point X?

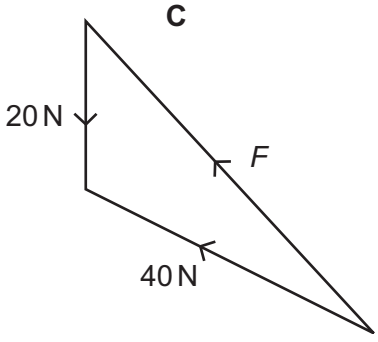
A



B



C



D