7

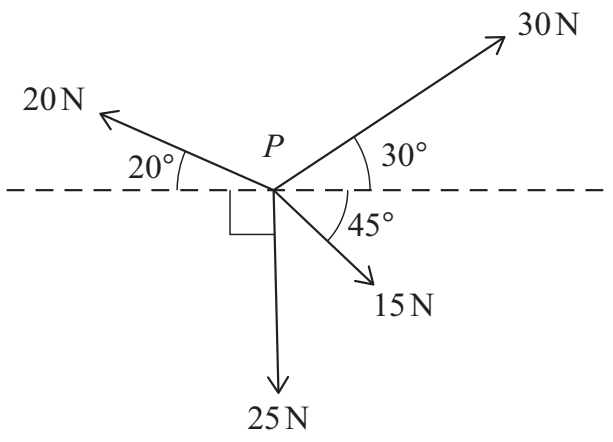

Fig. 7.1

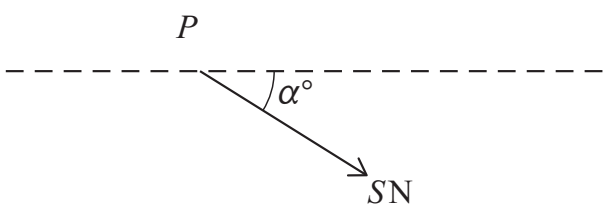

Fig. 7.2

Four coplanar forces of magnitudes 20 N, 30 N, 15 N and 25 N act at a point P in the directions shown in Fig. 7.1. The forces act in a vertical plane. The resultant of these forces has magnitude S N and acts at an angle $\alpha°$ below the horizontal as shown in Fig. 7.2.

(a) Find the value of S and the value of α. [6]

A small ring of mass 0.6 kg is threaded on a rough straight horizontal wire. The four forces shown in Fig. 7.1 act on the ring and are in the same vertical plane as the wire. The ring starts from rest and takes 3 s to travel a distance of 2 m along the wire.

(b) Find the coefficient of friction between the ring and the wire. [5]

Additional page

If you use the following page to complete the answer to any question, the question number must be clearly shown.