5

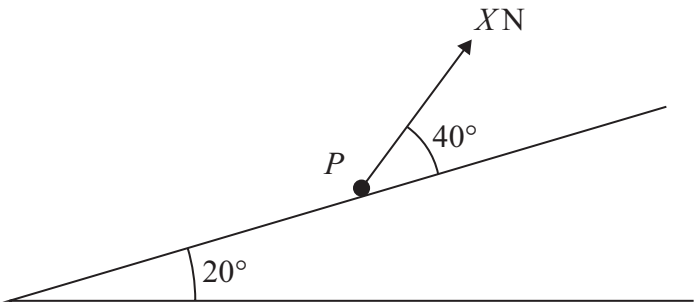

Figure 3

A particle P, whose weight is 50 N, is at rest on a rough plane. The plane is inclined to the horizontal at 20° and the coefficient of friction between P and the plane is 0.3

The particle P is held in equilibrium by a force of magnitude X newtons.

The line of action of the force makes an angle of 40° with the plane, as shown in Figure 3. The line of action of the force lies in a vertical plane which contains a line of greatest slope of the plane.

Given that P is on the point of sliding **down** the plane, find the value of X.

(6)

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(Total for Question 5 is 6 marks)