2. A suitcase of mass 40 kg is being dragged in a straight line along a rough horizontal floor at constant speed using a thin strap.

The strap is inclined at 20° above the horizontal.

The coefficient of friction between the suitcase and the floor is $\frac{3}{4}$

The strap is modelled as a light inextensible string and the suitcase is modelled as a particle.

Find the tension in the strap.

(7)

(Total for Question 2 is 7 marks)