Leave blank

2. A particle P of mass $2m$ is moving on a rough horizontal plane when it collides directly with a particle Q of mass $4m$ which is at rest on the plane. The speed of P immediately before the collision is $3u$. The speed of Q immediately after the collision is $2u$.

(a) Find, in terms of u, the speed of P immediately after the collision.

(3)

(b) State clearly the direction of motion of P immediately after the collision.

(1)

Following the collision, Q comes to rest after travelling a distance $\frac{6u^2}{g}$ along the plane.

The coefficient of friction between Q and the plane is μ.

(c) Find the value of μ.

(6)

Leave blank

Question 2 continued

Leave blank

Question 2 continued

Leave blank

Question 2 continued

(Total 10 marks)

Q2