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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)

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