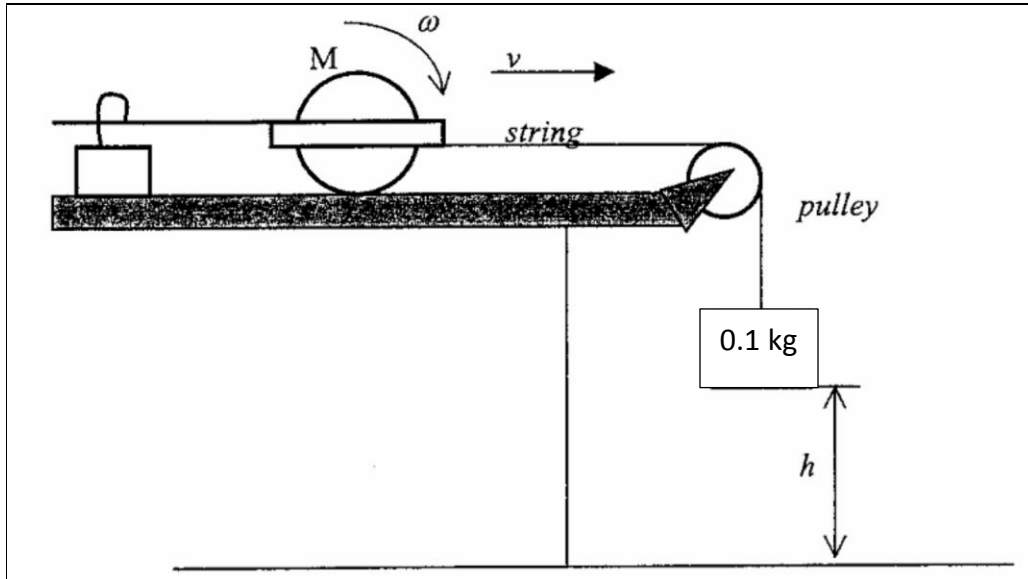


## Worksheet 5

### Year 13 Physics

Write the answers in your Exercise Book.

The following diagram shows the experimental set-up to investigate the **Extension of Idea of Kinetic Energy**.



- (a) Explain the **motion** of the cylinder. (1 mark)

Use the information below to answer parts (b) – (e)

When the  $0.1 \text{ kg}$  mass falls through a height of  $0.6 \text{ m}$ , the cylinder has a speed of  $1 \text{ m/s}$ .

Determine the

- (b) change in **potential energy** of  $0.1 \text{ kg}$  mass . (1 mark)
- (c) **linear kinetic energy** gained by the cylinder and the hanging mass.  
( mass of cylinder =  $0.7 \text{ kg}$ ) (1 mark)
- (d) **rotational kinetic energy** of the cylinder. (1 mark)
- (e) **inertia** of the cylinder. (radius of cylinder =  $7 \text{ cm}$ ) (1 mark)