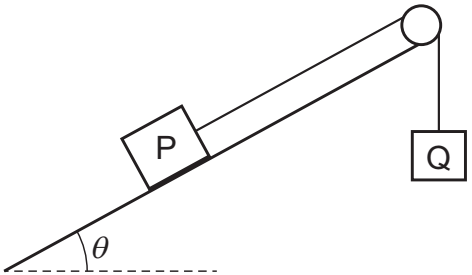
16 The diagram shows a block P of mass M connected by a string over a frictionless pulley to a block Q of mass m.



Block P moves up the slope with a constant velocity v. The slope is at angle θ to the horizontal.

The acceleration of free fall is g.

The resistive forces on the blocks are negligible.

Which expressions give the energy transferred per unit time to block P?

1 mgv

2 $Mgv\sin\theta$

3 $(M + m)gv$

A 1 and 2 **B** 1 only **C** 2 and 3 **D** 2 only