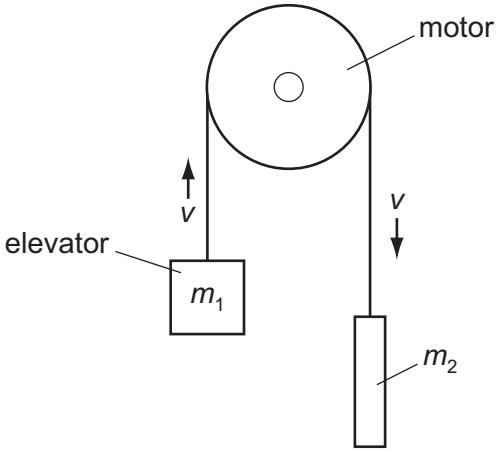
18 The diagram shows a lift system in which the elevator (mass m_1) is partly counterbalanced by a heavy weight (mass m_2).



At what rate does the motor provide energy to the system when the elevator is rising at a steady speed v? (g = acceleration of free fall)

A $\frac{1}{2} m_1 v^2$

B $\frac{1}{2} (m_1 - m_2) v^2$

C $m_1 g v$

D $(m_1 - m_2) g v$

19 The Mariana Trench in the Pacific Ocean has a depth of about 10 km.

Assuming that sea water is incompressible and has a density of about 1020 kg m^{-3}, what would be the approximate pressure at that depth?

A 10^5 Pa **B** 10^6 Pa **C** 10^7 Pa **D** 10^8 Pa

Space for working