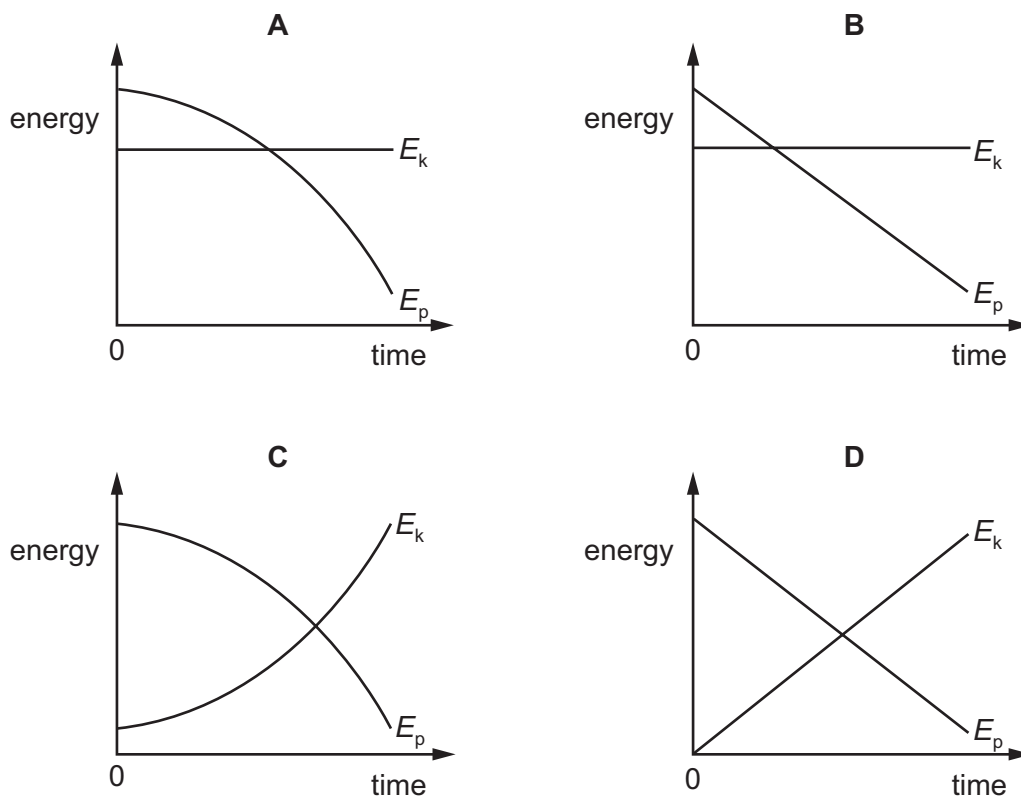


- 16** A steel ball is falling at constant speed in oil.

Which graph shows the variation with time of the gravitational potential energy  $E_p$  and the kinetic energy  $E_k$  of the ball?



- 17** The maximum useful output power of a car travelling on a horizontal road is  $P$ . The total resistive force acting on the car is  $kv^2$ , where  $v$  is the speed of the car and  $k$  is a constant.

Which equation is correct when the car is travelling at maximum speed?

**A**  $v^3 = \frac{P}{k}$       **B**  $v^2 = \frac{P}{k}$       **C**  $v = \left(\frac{P}{k}\right)^2$       **D**  $v = \left(\frac{P}{k}\right)^3$

- 18** Initially, four identical uniform blocks, each of mass  $m$  and thickness  $h$ , are spread on a table.



The acceleration of free fall is  $g$ .

How much work is done on the blocks in stacking them on top of one another?

**A**  $3mgh$       **B**  $6mgh$       **C**  $8mgh$       **D**  $10mgh$