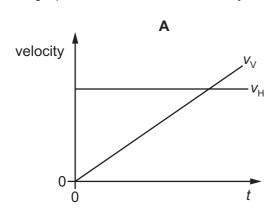
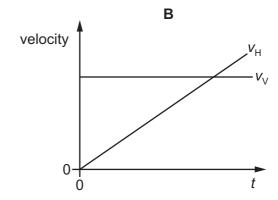
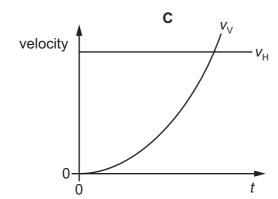
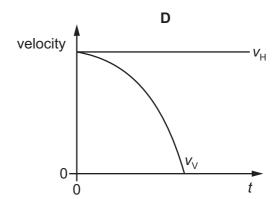
**5** A stone is projected horizontally at time t = 0 and falls. Air resistance is negligible. The stone has a horizontal component of velocity  $v_H$  and a vertical component of velocity  $v_V$ .

Which graph shows how  $v_H$  and  $v_V$  vary with time t?









**6** On the Earth, an object takes time  $T_{\rm E}$  to fall from rest through a vertical distance h.

On the Moon, the same object takes time  $T_{\rm M}$  to fall from rest through the same vertical distance h.

The ratio  $\frac{\text{acceleration of free fall on the Earth}}{\text{acceleration of free fall on the Moon}}$  is equal to 6.

Air resistance is negligible for the object on the Earth and on the Moon.

What is the ratio  $\frac{T_{\rm E}}{T_{\rm M}}$ ?

- A  $\frac{1}{6}$
- B  $\frac{1}{\sqrt{6}}$
- $\mathbf{C}$   $\sqrt{6}$
- **D** 6