

7 An isolated stationary nucleus Q decays into nucleus R and an α -particle. The α -particle has speed $1.5 \times 10^7 \text{ m s}^{-1}$.

(a) Complete the equation for this decay.



[1]

(b) By considering momentum, calculate the speed of nucleus R after the decay.

speed = m s^{-1} [3]

(c) State **three** quantities that are conserved during the decay.

1

2

3

[3]

[Total: 7]