

Question Number	Answer	Mark
12(a)	<ul style="list-style-type: none"> • Use of $\Delta E_{\text{grav}} = mg\Delta h$ (1) • Use of trigonometry to calculate Δh (1) • $P = 180 \text{ (W)}$ (1) <p>OR</p> <ul style="list-style-type: none"> • Use of $W = Fs$ (1) • Use of trigonometry to calculate component of weight along slope (1) • $P = 180 \text{ (W)}$ (1) <p><u>Example of calculation:</u> $P = 72 \text{ kg} \times 9.81 \text{ N kg}^{-1} \times 0.51 \text{ m s}^{-1} \times \sin 30^\circ = 180 \text{ W}$</p>	3
12(b)	<ul style="list-style-type: none"> • Use of efficiency = useful power output/total power input (1) • Calculates useful power output (1) • Power input = 3500 W (1) <p><u>Example of calculation</u> $15 \times 180 \text{ W} / 0.78 = 3.46 \times 10^3 \text{ W}$</p>	3
	Total for question 12	6