1 Fig. 1.1 shows the variation of velocity v with time t for a fuel-propelled model rocket travelling upwards.

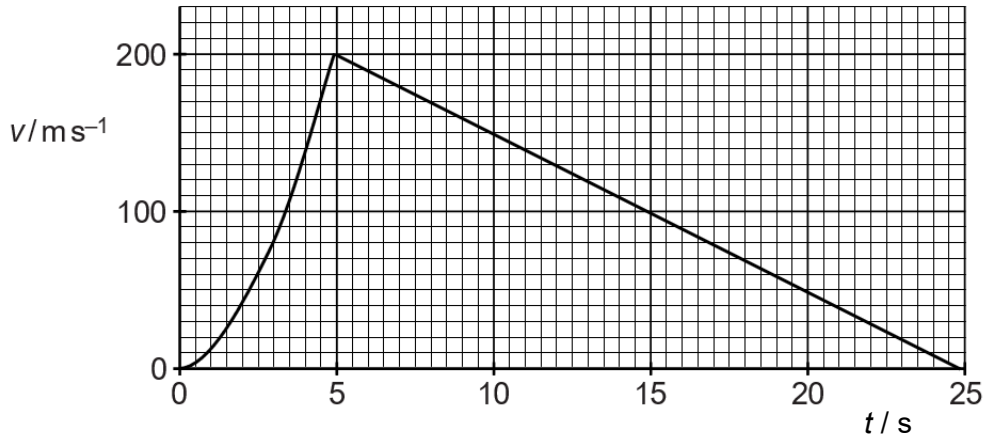

Fig. 1.1

(a) (i) Define *acceleration*.

.....

.....[1]

(ii) State the time interval when the rocket has the greatest acceleration.

between t = ... s to t = ... s [1]

(iii) Explain why the acceleration of the rocket increases between t = 0 to t = 5.0 s.

.....

.....

.....

.....

.....

.....[1]

(b) (i) Suggest a reason for the abrupt change in the motion of the rocket at t = 5.0 s.

.....

.....

.....

.....[1]

(ii) Explain how it can be deduced from Fig. 1.1 that air resistance has a negligible effect on the motion of the rocket.

.....

.....

.....

.....

.....

.....

.....

.....[2]

(c) Use Fig. 1.1 to determine the maximum height reached by the rocket.

height = ... m [2]

[Total: 8]