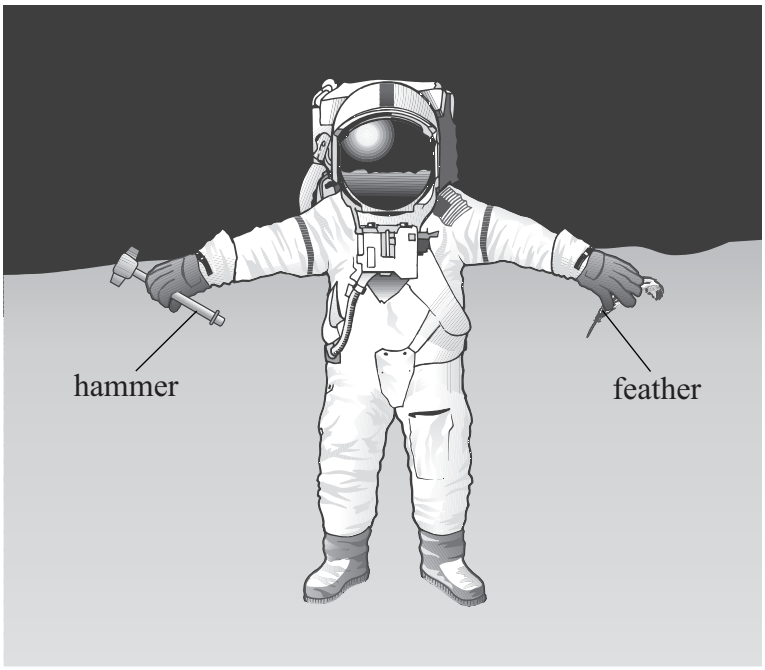
8 The Apollo 15 mission landed on the Moon in 1971.

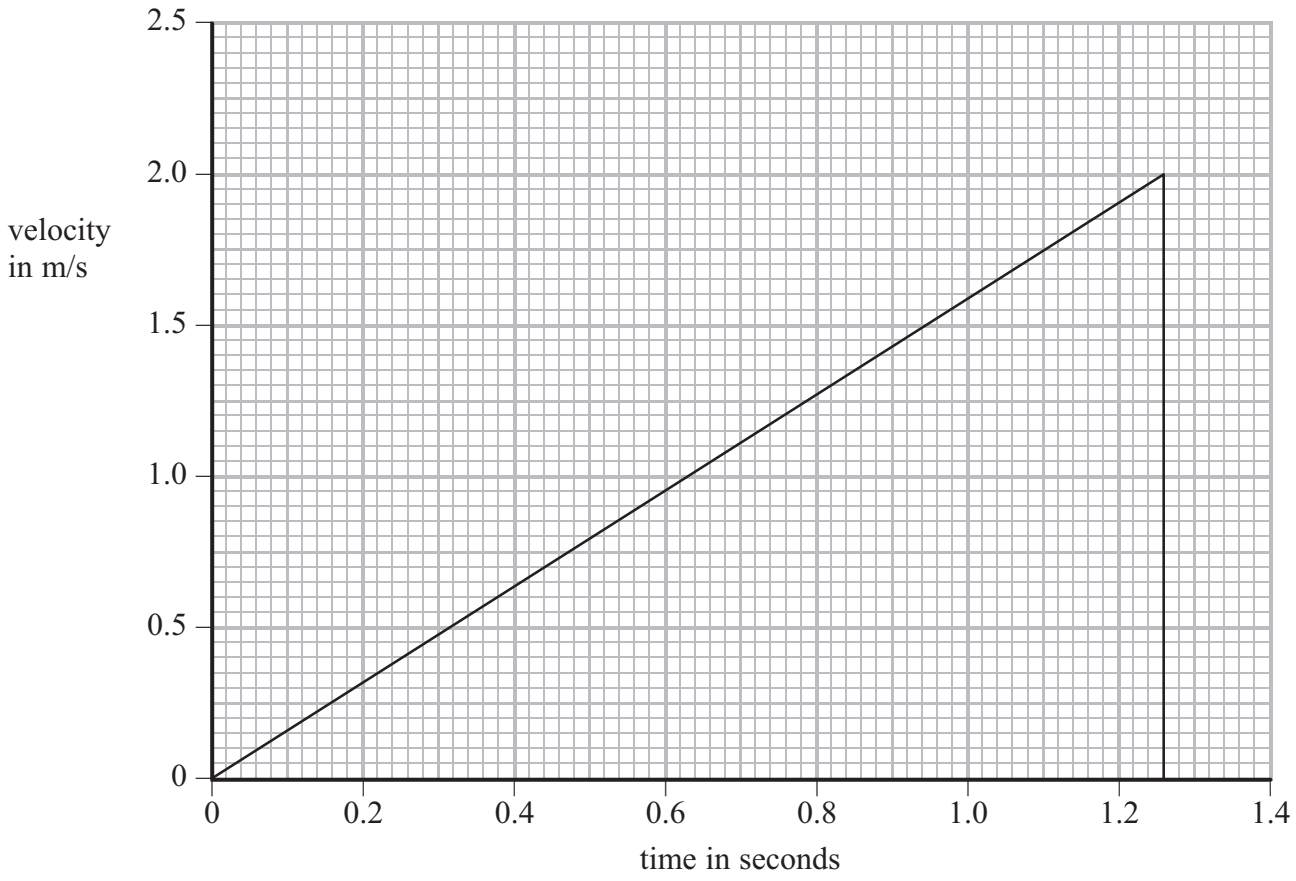
The astronaut David Scott dropped a hammer and a feather.

They were released from rest at the same time and from the same height.

The hammer and the feather landed at the same time.



(a) The graph shows how the velocity of the hammer changed with time.



(i) Use the graph to calculate the acceleration due to gravity on the Moon.

Give the unit.

(3)

Acceleration = ... Unit .....

(ii) Use the graph to calculate the height the hammer was dropped from.

(2)

Height = ... m

(b) The gravitational field strength is smaller on the Moon than on the Earth.

Suggest why.

(1)

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(c) If the same experiment is carried out on Earth, air resistance affects both objects.

The feather reaches the ground after the hammer, even though the force of air resistance is smaller on the feather than on the hammer.

Explain why the feather reaches the ground after the hammer.

(4)

(Total for Question 8 = 10 marks)