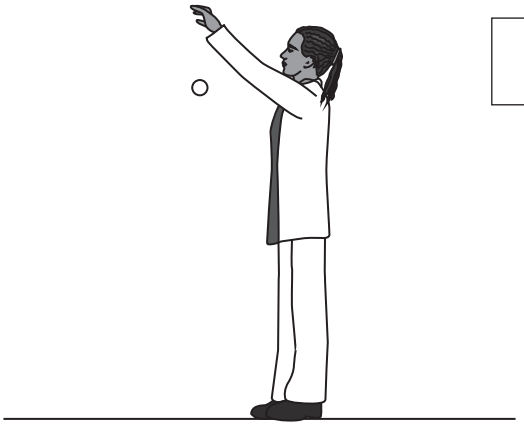
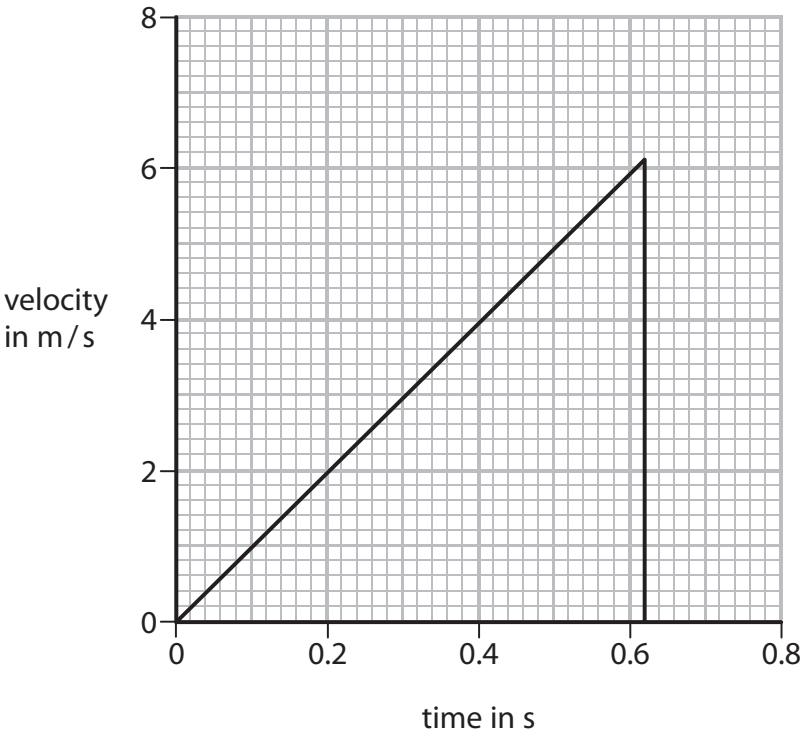
7 (a) The diagram shows a coin being dropped from a height.



Not to scale

The graph shows how the velocity of the coin changes until it hits the ground.



(i) State the equation linking acceleration, change in velocity and time.

(1)

(ii) The coin hits the ground in a time of 0.62 s with a velocity of 6.1 m/s.

Calculate the acceleration of the coin as it falls.

Give the unit.

(3)

acceleration = ... unit .....

(iii) State the feature of the graph that shows this acceleration.

(1)

.....

(iv) Calculate the height from which the coin was dropped.

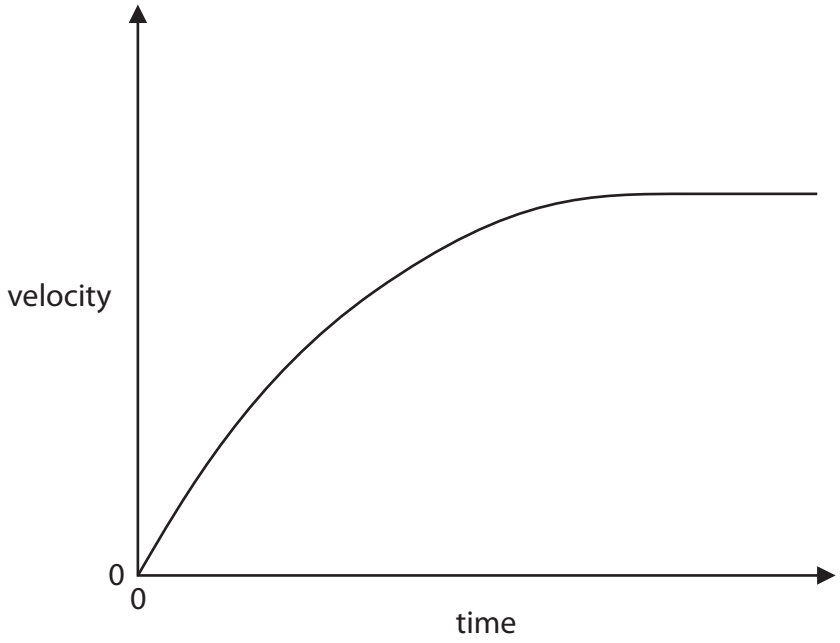
Use the graph to help with your calculation.

(3)

height = ... m

(b) A ball is dropped from a very large height.

The graph shows how the velocity of the ball changes until just before it hits the ground.



Explain why the velocity of the ball changes in this way.

Refer to ideas about forces in your answer.

(5)

(Total for Question 7 = 13 marks)

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