2 **(a)** Complete Fig. 2.1 to show whether each of the quantities listed is a vector or a scalar.

For Examiner's Use

	vector / scalar
distance moved	.....
speed	.....
acceleration	.....

Fig. 2.1

[3]

(b) A ball falls vertically in air from rest. The variation with time t of the distance d moved by the ball is shown in Fig. 2.2.

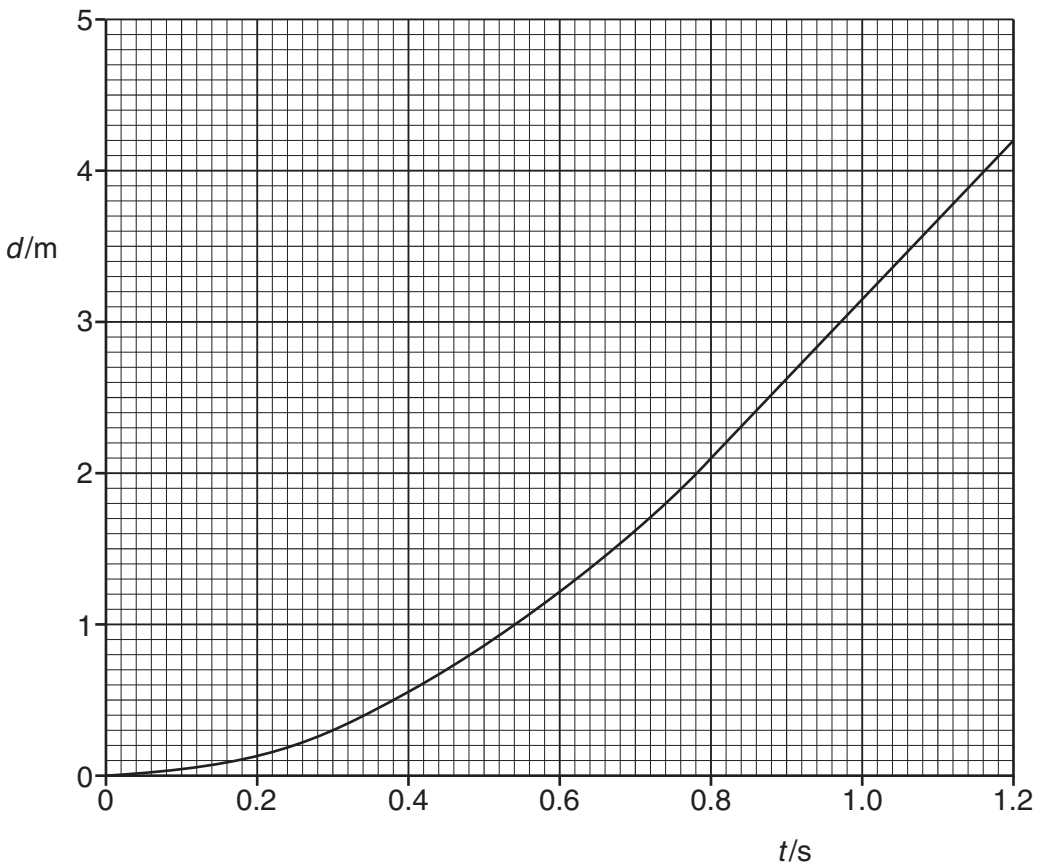

Fig. 2.2

For Examiner's Use

(i) By reference to Fig. 2.2, explain how it can be deduced that

1. the ball is initially at rest,

.....

.....

.....[2]

2. air resistance is not negligible.

.....

.....[1]

(ii) Use Fig. 2.2 to determine the speed of the ball at a time of 0.40 s after it has been released.

speed = ... m s^{-1} [2]

(iii) On Fig. 2.2, sketch a graph to show the variation with time *t* of the distance *d* moved by the ball for negligible air resistance. You are not expected to carry out any further calculations. [3]