**Q1.**A car driver sees a rabbit on the road.

The driver makes an emergency stop after he sees the rabbit.

Figure 6 shows the speed of the car from the time the driver sees the rabbit until the car stops.



**Figure 6**

Calculate the distance that the car travels in the first 0.5 seconds.

**(3)**

distance = ........................................................... m

**(Total for question = 3 marks)**

 **Q2.**A car is travelling down a slope at 2.0 m/s.

The car accelerates for 4.0 s.

The speed of the car increases to 12 m/s.

Calculate the acceleration of the car.

Use the equation



**(2)**

acceleration of the car = ........................................................... m/s2

**(Total for question = 2 marks)**

**Q3.**Figure 7 shows a skier going down a hill.



**Figure 7**

Describe how her speed at the bottom of the slope could be determined.

**(3)**

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**(Total for question = 3 marks)**

 **Q4.**An aircraft waits at the start of a runway.
The aircraft accelerates from a speed of 0 m/s to a speed of 80 m/s.
The acceleration of the aircraft is 4 m/s2.

Calculate the distance, *x*, travelled by the aircraft while it is accelerating.

Use the equation



**(2)**

*x* = ........................................................... m

**(Total for question = 2 marks)**