8 A car is moving along a road.

(a) The car has an initial velocity of 26 m / s.

The car then accelerates at 1.2 m / s^2 until it reaches a velocity of 35 m / s.

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

(1)

(ii) Calculate the time taken for the car to accelerate to 35 m/s.

(3)

time = ... s

(b) A radar speed gun is used to measure the speed of the moving car.

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The radar speed gun emits radio waves towards the moving car.

The moving car reflects the radio waves back to a detector on the gun.

The detected radio waves have a different frequency from the emitted radio waves.

This change in frequency is used to measure the speed of the moving car.

Explain this change in frequency when the car is moving towards the radar speed gun.

(4)

(Total for Question 8 = 8 marks)

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