1 (a) Underline **all** the SI base units in the following list.

ampere   coulomb   current   kelvin   newton   [1]

(b) A toy car moves in a horizontal straight line. The displacement s of the car is given by the equation

$$s = \frac{v^2}{2a}$$

where a is the acceleration of the car and v is its final velocity.

State **two** conditions that apply to the motion of the car in order for the above equation to be valid.

1 ....

2 ....
[2]

(c) An experiment is performed to determine the acceleration of the car in **(b)**. The following measurements are obtained:

$s = 3.89\,\text{m} \pm 0.5\%$
$v = 2.75\,\text{m\,s}^{-1} \pm 0.8\%$.

(i) Calculate the acceleration a of the car.

$a =$ .... $\text{m\,s}^{-2}$ [1]

(ii) Determine the percentage uncertainty, to two significant figures, in a.

percentage uncertainty = ...% [2]

(iii) Use your answers in **(c)(i)** and **(c)(ii)** to determine the absolute uncertainty in the calculated value of a.

absolute uncertainty = ... ms^{-2} [1]