

# Worksheet 1

## Physics data logging Project

1. (a) Combine the two equations for average velocity to obtain an equation (**equation 3**) in terms of  $u$ ,  $v$  and  $t$  with  $s$  as subject of formula.

$$\langle v \rangle = \frac{1}{2}(u + v) \quad \dots\dots \text{equation 1}$$

$$\langle v \rangle = \frac{s}{t} \quad \dots\dots \text{equation 2}$$

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**Equation 3**

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- (b) (i) Write down the equation for acceleration (**equation 4**).

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- (ii) Obtain  $v$  as subject of formula (**equation 5**).

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- (c) Eliminate  $v$  from equations 3 and 5 and obtain a single equation with  $s$  as subject of formula (**equation 6**).

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- (d) Using equation 3, obtain another equation (**equation 7**) with  $t$  as subject of formula.

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(e) Using equations 5 and 7, obtain a single equation (**equation 8**) with  $v^2$  as subject of formula.

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2. Write down the following equations in the boxes.

	Equation 2
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	Equation 4
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	Equation 5
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	Equation 7
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The four equations are known as the equations of kinematics.

3. Name two conditions satisfied by the above equations.

(i) .....

(ii) .....