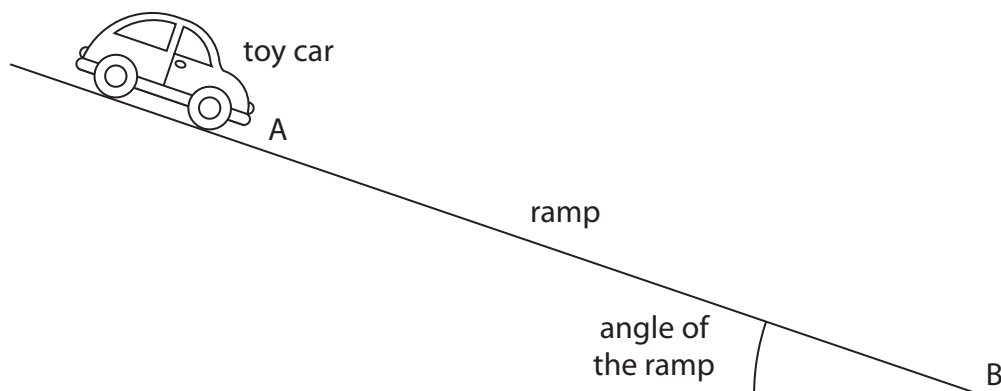


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- 3 A student uses this apparatus to investigate how the angle of a ramp affects the time taken for a toy car to travel down the ramp.



This is the student's method.

- set the angle of the ramp to 10° and measure the time for the car to travel from A to B
- repeat the experiment for five different angles, using the same car travelling from A to B

(a) The table lists some variables in this investigation.

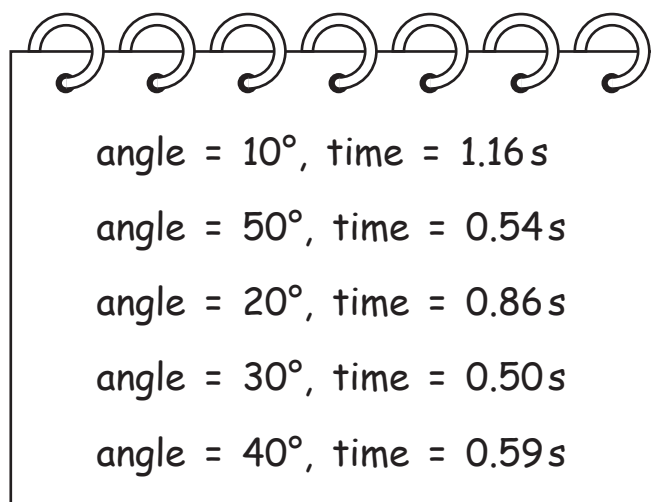
Place one tick (✓) in each row to show the independent, dependent and control variables.

(4)

| | Independent variable | Dependent variable | Control variable |
|------------------------------|----------------------|--------------------|------------------|
| Type of toy car | | | |
| Time to travel from A to B | | | |
| Angle of ramp | | | |
| Distance travelled down ramp | | | |



(b) These are the student's results.



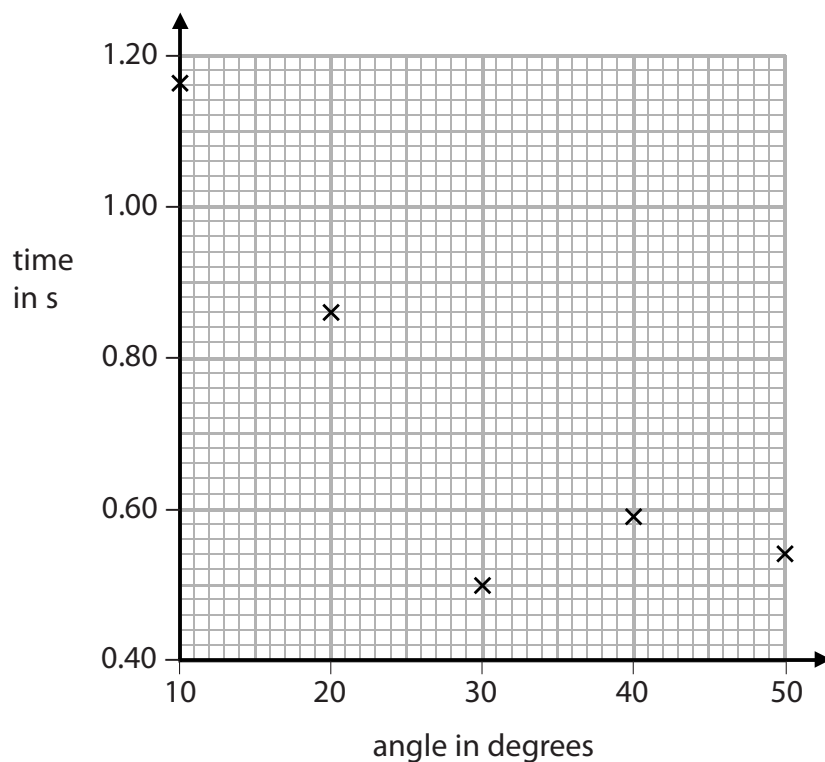
| |
|------------------------------------|
| angle = 10° , time = 1.16 s |
| angle = 50° , time = 0.54 s |
| angle = 20° , time = 0.86 s |
| angle = 30° , time = 0.50 s |
| angle = 40° , time = 0.59 s |

Draw a table of the student's results.

(3)



(c) The graph shows the results of the student's investigation.



(i) Circle the anomalous point on the graph.

(1)

(ii) Suggest how the student should deal with the anomalous result.

(1)

(iii) Draw the curve of best fit on the graph.

(1)

(iv) Suggest why the student did not start either axis from zero.

(1)

(Total for Question 3 = 11 marks)

