

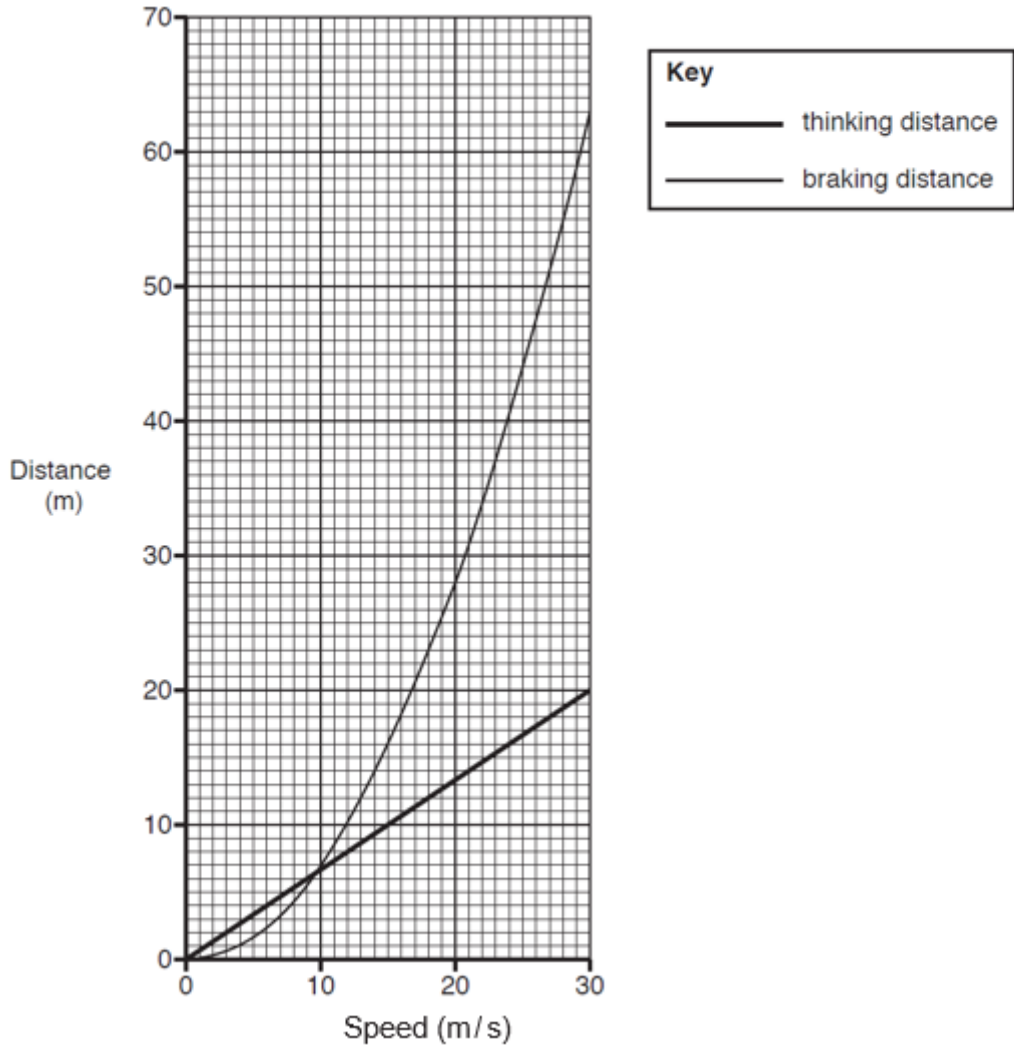
**GCSE Physics A (Gateway)**

**J249/02 Physics A P5-P8 and P9 (Foundation Tier)**

**Question Set 18**

1

The graph shows thinking and braking distances for a car at different speeds.



(a) Describe how **thinking distance** varies with increasing speed.

Use data from the graph in your answer.

(b) (i) Use the graph to find the **thinking distance** at 24 m/s.

[2]

Thinking distance = ..... m

[1]

(ii) Calculate the **thinking time** at 24 m/s.

Use your answer to (b)(i) and the equation: distance travelled = speed  $\times$  time

Give your answer to **2** decimal places.

Thinking time = ..... s

[3]

(c) (i) State **one** factor that could **increase** thinking distance.

[1]

(ii) Calculate the **stopping distance** at 15 m/s.

Use the graph to help you.

Stopping distance = ..... m

[2]

(d)

How does the speed affect the **kinetic energy** and **braking distance** of the car?

Use the graph in your answer.

[3]

**Total Marks for Question Set 18: 12**

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