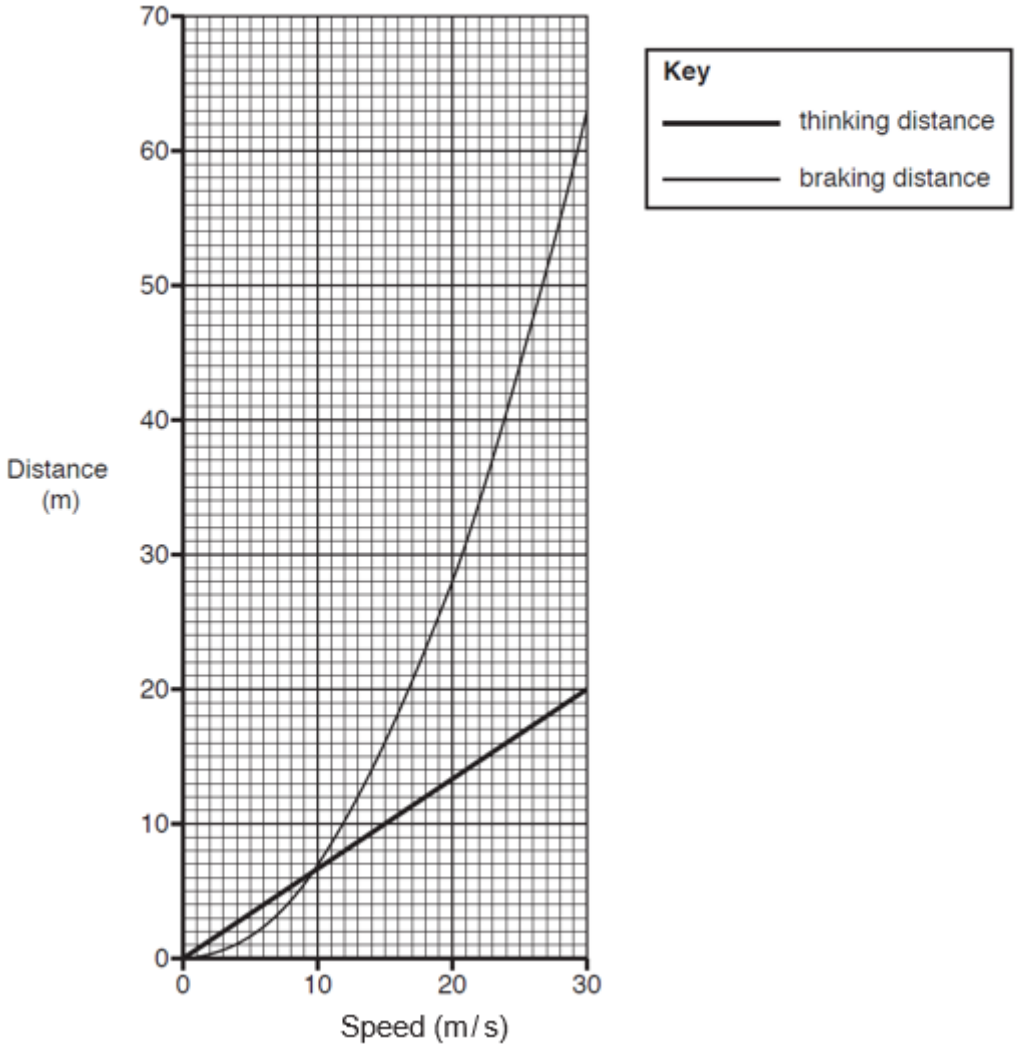
Oxford Cambridge and RSA

GCSE Physics A (Gateway)

J249/04 Physics A P5-P8 and P9 (Higher Tier)

Question Set 7

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



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

Use data from the graph in your answer.

[2]

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

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 × 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 7: 12