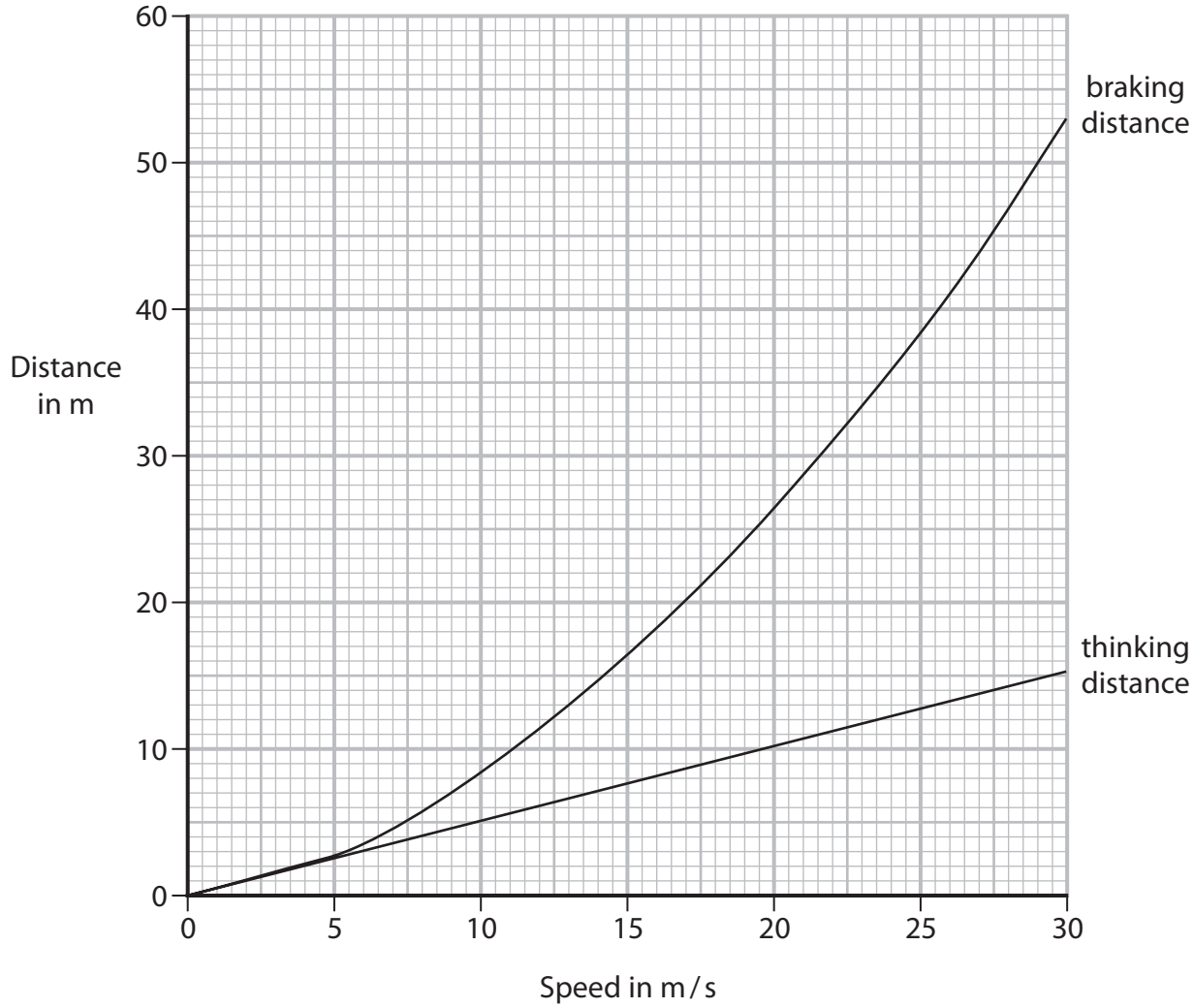
5 The graph shows how the thinking distance and the braking distance vary with the speed of a car.



(a) Which of these does **not** affect thinking distance?

(1)

- ☒ **A** alcohol consumed by the driver
- ☒ **B** condition of the road
- ☒ **C** speed of the car
- ☒ **D** tiredness of the driver

(b) Which of these would increase the braking distance of the car?

(1)

- ☒ **A** faster reaction time of driver
- ☒ **B** ice on the road
- ☒ **C** more powerful brakes
- ☒ **D** tyres with more grip

(c) Determine the stopping distance of the car when the speed of the car is 20 m / s.

(3)

stopping distance = ... m

(d) (i) State the formula linking average speed, distance moved and time taken.

(1)

(ii) Determine the reaction time of the driver of the car.

(3)

reaction time = ... s

(e) Calculate the mean braking acceleration of the car as it brakes to a stop from an initial speed of 30 m / s.

(4)

acceleration = ... m / s^2

(Total for Question 5 = 13 marks)