

- 7 The photograph shows a car tyre that needs to be inflated.



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The tyre exerts a pressure on the road of 270 kPa.

The area of the tyre touching the road is  $0.016 \text{ m}^2$ .

- (a) (i) State the equation linking pressure, force and area.

(1)

- (ii) Calculate the force exerted on the road by the tyre.

Give the unit.

(4)

force = ..... unit .....



(b) Use ideas about molecules to explain why the air inside the tyre exerts pressure.

(3)

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(c) Air is pumped into the tyre to inflate it.

This increases the temperature and the pressure of the air in the tyre.

Use ideas about molecules to explain why the air pressure in the tyre increases.

(3)

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(Total for Question 7 = 11 marks)

