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2. A car of mass 900 kg is moving down a straight road which is inclined at an angle α to the horizontal, where $\sin\alpha = \frac{1}{12}$

The engine of the car is working at a constant rate of 15 kW.
The resistance to the motion of the car is modelled as a constant force of magnitude 400 N.

Find the acceleration of the car at the instant when it is moving at $16\,\text{m s}^{-1}$

(5)

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Question 2 continued

Q2

(Total 5 marks)