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2. A van has mass 750 kg. The van is moving up a straight road at constant speed U m s^{-1}

The road is inclined to the horizontal at an angle θ, where $\sin\theta = \frac{1}{15}$

The resistance to the motion of the van from non-gravitational forces is modelled as a single force of magnitude $30U$ newtons. The engine of the van is working at a constant rate of 16 kW.

Find the value of U.

(5)

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Q2

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