Dynamics

Dynamics Example - F=ma on a slope

A car of mass 1500 kg is moving up a straight road, which is inclined at an angle θ to the horizontal, where $\sin\theta = \frac{1}{14}$
The resistance to the motion of the car from non-gravitational forces is constant and is modelled as a single constant force of magnitude 650 N. The car's engine is working at a rate of 30 kW.
Find the acceleration of the car at the instant when its speed is $15ms^{-1}$.