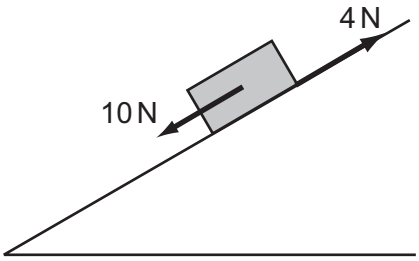
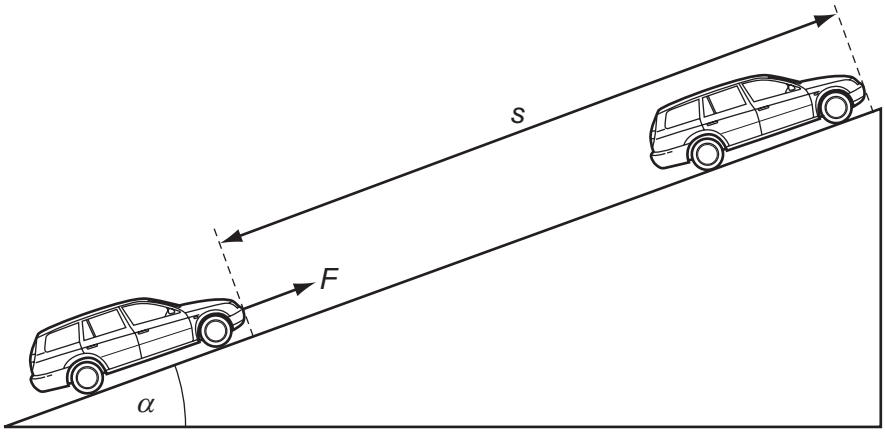
14 A brick weighing 20 N rests on an inclined plane. The weight of the brick has a component of 10 N parallel with the plane. The brick also experiences a frictional force of 4 N.



What is the acceleration of the brick down the plane? Assume that the acceleration of free fall g is equal to $10\,\text{m s}^{-2}$.

A $0.3\,\text{m s}^{-2}$ **B** $0.8\,\text{m s}^{-2}$ **C** $3.0\,\text{m s}^{-2}$ **D** $8.0\,\text{m s}^{-2}$

15 A constant force F, acting on a car of mass m, moves the car up the slope through a distance s at constant velocity v. The angle of the slope to the horizontal is α.



Which expression gives the efficiency of the process?

A $\frac{mgs\sin\alpha}{Fv}$ **B** $\frac{mv}{Fs}$ **C** $\frac{mv^2}{2Fs}$ **D** $\frac{mg\sin\alpha}{F}$

Space for working