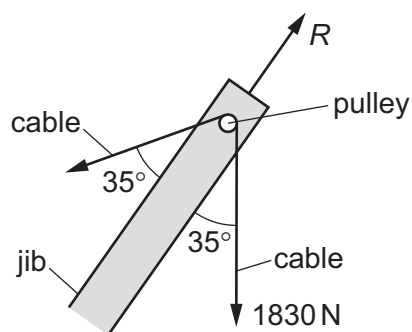


- 13 The diagram shows the jib of a crane at an angle of 35° to the vertical. A cable passes over a frictionless pulley and carries a load of 1830 N.



The force R that the pulley exerts on the cable is in line with the jib. The cable and the pulley are in equilibrium.

What is the value of R ?

- A 1000 N B 1500 N C 2100 N D 3000 N
- 14 What is a unit for density?
- A Nm^{-3} B g mm^{-1} C kg cm^{-2} D $\mu\text{g mm}^{-3}$
- 15 Which statement about energy is **not** correct?
- A Energy is never lost but it may be transferred between different forms.
- B In an inelastic collision, the total energy is constant.
- C The efficiency of a system is the ratio of the useful energy output to the total energy input.
- D When a machine does work, friction reduces the total energy.
- 16 An electric kettle is rated as having an input power of 1.50 kW and an efficiency of 65.0%.

The kettle is switched on for 2.00 minutes.

How much energy is transferred to the water in the kettle?

- A 0.975 kJ B 117 kJ C 180 kJ D 277 kJ