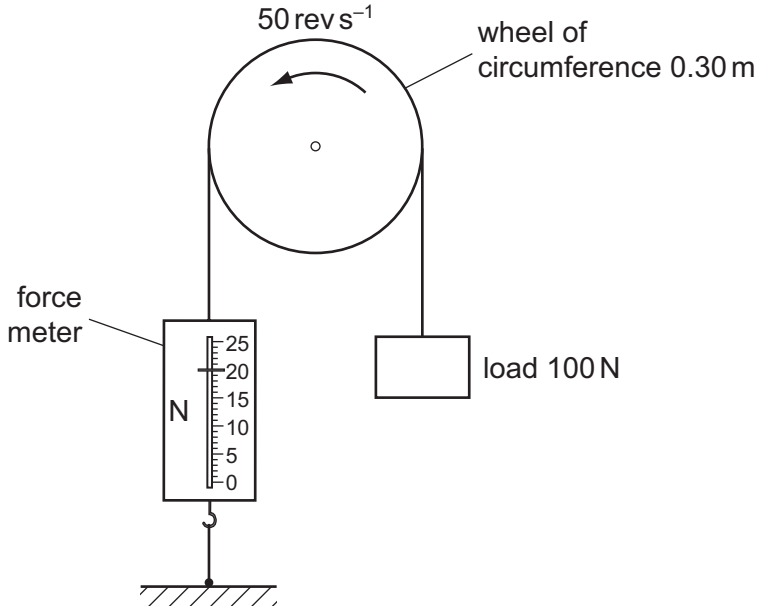
18 A wind turbine has blades that sweep an area of 2000 m^2. It converts the power available in the wind to electrical power with an efficiency of 50%.

What is the electrical power generated if the wind speed is 10 $m\,s^{-1}$? (The density of air is 1.3 $kg\,m^{-3}$.)

A 130 kW **B** 650 kW **C** 1300 kW **D** 2600 kW

19 The diagram shows a wheel of circumference 0.30 m. A rope is fastened at one end to a force meter. The rope passes over the wheel and supports a freely hanging load of 100 N. The wheel is driven by an electric motor at a constant rate of 50 revolutions per second.

When the wheel is turning at this rate, the force meter reads 20 N.



What is the output power of the motor?

A 0.3 kW **B** 1.2 kW **C** 1.8 kW **D** 3.8 kW

Space for working