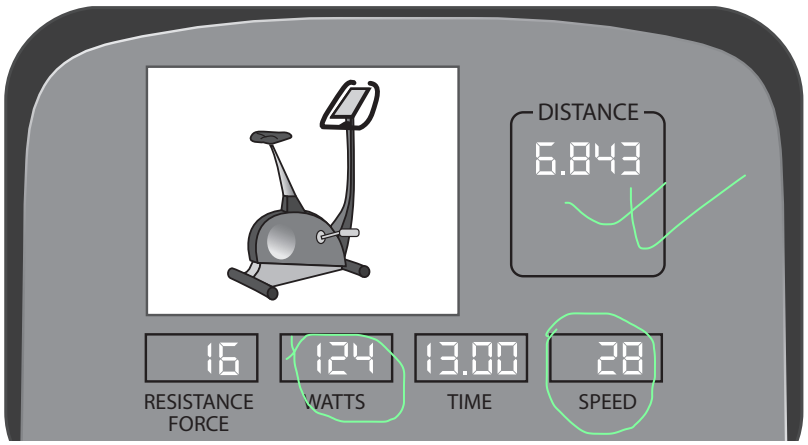
14 A stationary exercise bicycle has the display shown.



The equivalent motion of the bicycle is displayed as a speed and a distance travelled.

(a) One of the quantities being displayed is expressed as 'watts'.

State the name of this quantity.

(1)

Power

(b) The bicycle provides a resistance force against the cyclist. The unit of this resistance force is newtons. The unit of speed is km hours $^{-1}$.

Show that the values displayed for the resistance force and the speed are consistent with the value displayed as watts.

(3)

Power = 124 W

Speed = $\frac{28}{3.6}$

Force = $\frac{124}{7.78}$

Power = Force X Speed

(c) The time on the display is given in minutes and the distance on the display is given in kilometres.

Deduce whether the speed given on the display is instantaneous or an average.

(4)

(Total for Question 14 = 8 marks)