

22 The speed  $v$  of waves in deep water is given by the equation

$$v^2 = \frac{g\lambda}{2\pi}$$

where  $\lambda$  is the wavelength of the waves and  $g$  is the acceleration of free fall.

A student measures the wavelength  $\lambda$  and the frequency  $f$  of a number of these waves.

Which graph should he plot to give a straight line through the origin?

- A  $f^2$  against  $\lambda$
- B  $f$  against  $\lambda^2$
- C  $f$  against  $\frac{1}{\lambda}$
- D  $f^2$  against  $\frac{1}{\lambda}$