

Answer on Question#55122 - Physics - Computational Physics

In an experiment to determine the acceleration due to gravity g using the simple pendulum, T^2 was plotted on the vertical axis and l on the horizontal axis. The graph

- A. has an intercept on the T^2 axis
- B. has an intercept on the l axis
- C. pass through the origin
- D. is parallel to the l axis

Solution:

The period of the pendulum is given by

$$T = 2\pi \sqrt{\frac{l}{g}}$$

Therefore

$$T^2 = 4\pi^2 \frac{l}{g}$$

Its graph correspond to the line which passes through the origin.

Answer: C.