

Gravitational Potential

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Warm up problems

- 1 The gravitational field strength on the moon is 1.7 N kg^{-1} . Assuming that the moon is a uniform sphere of radius $1.74 \times 10^6 \text{ m}$, calculate
 - (a) the mass of the moon,
 - (b) the gravitational field strength $1.0 \times 10^6 \text{ m}$ above its surface.
- 2 A man is able to jump vertically 1.5 m on Earth. What height should he be able to jump on a planet of one third of the density of the Earth and one half of its radius?

Lesson Objectives

- 1 To revise gravitational potential.
- 2 To learn how this relates to gravitational potential energy.
- 3 To do calculations involving changes in gravitational potential energy.

REMINDER: Office hours are week 1 Tuesdays 3.45–5.0 p.m. in room 19.

Next office hours: Tuesday 9 October 2012

Gravitational potential

Understanding of the definition of gravitational potential, including zero value at infinity, and of gravitational potential difference.

Work done in moving a mass m given by

$$\Delta W = m\Delta V$$

[AQA GCE AS and A Level Specification Physics A, 2009/10 onwards]