

1 (a) (i) State what is meant by a *field of force*.

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.....
..... [2]

(ii) Define *gravitational field strength*.

.....
..... [1]

(b) An isolated planet may be assumed to be a uniform sphere of radius $3.39 \times 10^6 \text{ m}$ with its mass of $6.42 \times 10^{23} \text{ kg}$ concentrated at its centre.

Calculate the gravitational field strength at the surface of the planet.

field strength = N kg^{-1} [3]

(c) Calculate the height above the surface of the planet in (b) at which the gravitational field strength is 1.0% less than its value at the surface of the planet.

height = m [3]