

Solutions

Each answer shows the steps, then the **result**.

2.1

- Mass is the amount of matter (kg), the same everywhere; weight is the gravitational force on it (N) and depends on the local field

2.2

- $F_g = mg = 50 \times 9.8 = 490 \text{ N}$

2.3

- it becomes $\frac{1}{9}$ as large ($1/3^2$)

2.4

- mass = 2.0 kg (unchanged); weight = $2.0 \times 1.6 = 3.2 \text{ N}$

3.1 D

3.2 C

3.3

(a)

- twice as strong ($g \propto M$ at fixed r)

(b)

- mass = 10 kg; weight = $10 \times (2 \times 9.8) = 196 \text{ N}$