

WRITTEN EXERCISE #01 - T23.3

TOPIC 23 MOTION, FORCE & ENERGY
SUBTOPIC 23.3 MASS AND WEIGHT

ANSWER ALL QUESTIONS

- 1 The table shows the weights of some masses on the surface of four different planets.
Which planet has the greatest gravitational field strength?

	mass	weight
A	0.5kg	20N
B	2.0kg	20N
C	0.5kg	40N
D	2.0kg	40N

- 2 Which property of a spacecraft is zero when it travels through outer space after leaving Earth's gravitational field?

- A its density
B its energy
C its mass
D its weight

- 3 What are two correct characteristics of mass and weight?

	mass	weight
A	measured in kg	measured in kg
B	measured in N	measured in N
C	can be measured using a spring balance	can be measured using a beam balance
D	can be measured using a beam balance	can be measured using a spring balance

4 A stone on Earth has a mass of 80 g. On Earth, the acceleration due to gravity $g = 10\text{N/kg}$.

a) Explain the difference between mass and weight.

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

(b) Calculate

(i) the mass of the stone in kg, [1]

(ii) the weight of the stone on Earth.

..... [1]

5 A stone has a mass of 2.0 kg.

The gravitational field strength, g , on the Earth's surface is 10 N/kg .

(a) Calculate the weight of the stone on the Earth's surface.

weight= N [1]

(b) On the Moon, the gravitational field strength is less than on the Earth. The stone is taken to the Moon.
State the change, if any, in

(i) the mass of the stone

(ii) the weight of the stone [2]

