Mass, Weight and Density – 2023 June O Level 5054

1. June/2023/Paper_ 5054/11/No.5

The gravitational field strength on Earth is 9.8 N/kg.

The gravitational field strength on Mars is 3.7 N/kg.

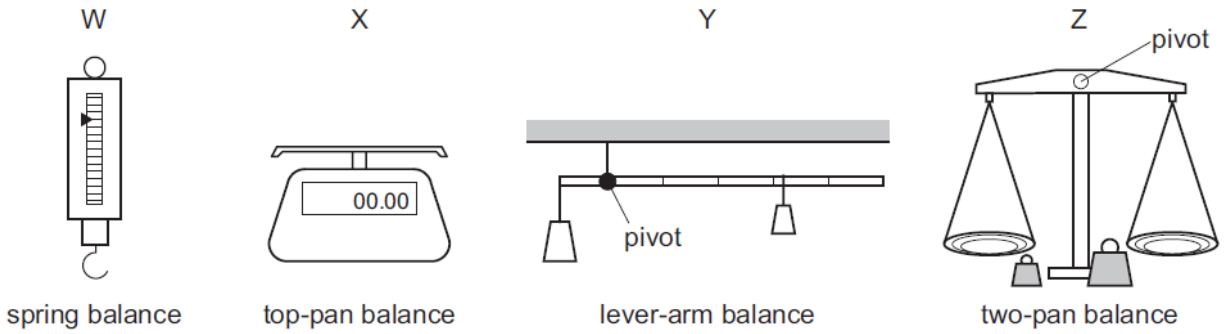
The difference between the weight of an object on Earth and the weight of the same object on Mars is 25 N.

What is the mass of the object?

A 1.9 kg **B** 2.6 kg **C** 4.1 kg **D** 6.8 kg

2. June/2023/Paper_ 5054/12/No.5

The diagrams show four balances, W, X, Y and Z.



The scales of all the balances are calibrated on the Earth to measure mass.

Which balances also measure mass correctly when used on the Moon?

A W and X **B** W and Z **C** X and Y **D** Y and Z

3. June/2023/Paper_ 5054/12/No.6

A spacecraft carries a probe to Mars where the gravitational field strength is 3.7 N/kg. The weight of the probe on Mars is 370 N.

The gravitational field strength on Earth is 9.8 N/kg.

What are the mass and the weight of the probe on Earth?

	mass / kg	weight / N
A	100	370
B	100	980
C	370	98
D	370	3700