

- 1 The radius of the Earth is approximately  $6.4 \times 10^6$  m, and the radius of the Moon is approximately  $1.7 \times 10^6$  m. A student wishes to build a scale model of the Solar System in the classroom, using a football of radius 0.12 m to represent the Earth.

Which object would best represent the Moon?

- A basketball
- B cherry
- C golf ball
- D tennis ball

- 2 When a beam of light is incident on a surface, it delivers energy to the surface. The intensity of the beam is defined as the energy delivered per unit area per unit time.

What is the unit of intensity, expressed in SI base units?

- A  $\text{kg m}^{-2} \text{s}^{-1}$       B  $\text{kg m}^2 \text{s}^{-3}$       C  $\text{kg s}^{-2}$       D  $\text{kg s}^{-3}$

- 3 A ship is travelling with a velocity of  $8.0 \text{ km h}^{-1}$  in a direction  $30^\circ$  east of north.

What are the components of the ship's velocity in the east and north directions?

	component of velocity in east direction / $\text{km h}^{-1}$	component of velocity in north direction / $\text{km h}^{-1}$
A	4.0	4.0
B	4.0	6.9
C	4.6	6.9
D	6.9	4.0