1 Which is an SI base unit?
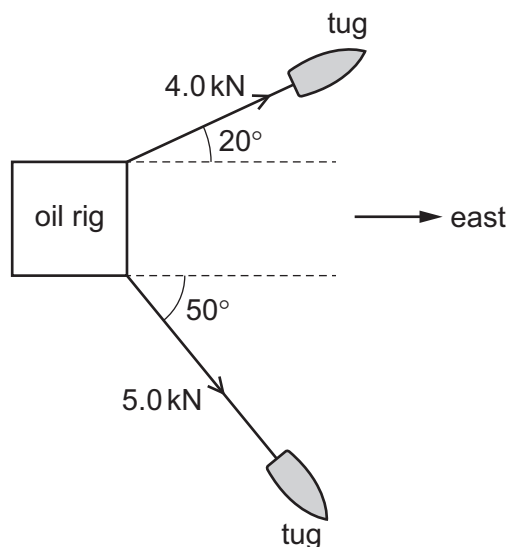
    A current

    B gram

    C kelvin

    D volt

2 Osmium, a naturally occurring element, has a density of $23\,000\,\text{kg}\,\text{m}^{-3}$.

What is also a value of the density of osmium?

    A $2.3 \times 10^{4}\,\mu\text{g}\,\text{cm}^{-3}$

    B $2.3 \times 10^{4}\,\text{g}\,\text{cm}^{-3}$

    C $2.3\,\text{kg}\,\text{cm}^{-3}$

    D $2.3 \times 10^{-2}\,\text{kg}\,\text{cm}^{-3}$

3 Two tugs are towing an oil rig as shown.

The tensions in the towing cables are 4.0 kN and 5.0 kN.

What is the total force acting on the rig due to the cables, in the direction to the east?

    A 3.1 kN   **B** 5.2 kN   **C** 7.0 kN   **D** 7.3 kN

4 What is the approximate kinetic energy of an Olympic athlete when running at maximum speed during a 100 m race?

    A 400 J   **B** 4000 J   **C** 40 000 J   **D** 400 000 J