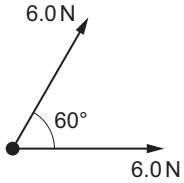
Name:

A-Level Physics: **w25 13**

**4** The diagram shows two forces of 6.0 N acting on an object. The angle between the lines of action of the two forces is 60°.




What is the magnitude of the resultant force?

**A** 6.0 N **B** 7.9 N **C** 10 N **D** 12 N

A-Level Physics: **s25 13**

**1** What represents a vector quantity?

**A** 1 N upwards

**B** 2 kg decrease

**C** 3 K cooler

**D** 4 s later

**2** What is a reasonable estimate of the current in an electric kettle that is in use?

**A** 8 μA **B** 8 mA **C** 8 A **D** 8 kA

**3** Which statement about errors in measurements is correct?

**A** An accurate set of measurements always has a small random error.

**B** A precise set of measurements always has a small systematic error.

**C** A random error can be reduced by taking an average of several measurements.

**D** A systematic error creates a random set of measurements spread out about the true value.

A-Level Physics: **w25 11**

**1** The table shows some physical quantities.

Which row correctly identifies the quantities as scalars or vectors?

| | acceleration | charge | kinetic energy | wavelength |
|---|---|---|---|---|
| **A** | scalar | vector | vector | scalar |
| **B** | vector | vector | scalar | scalar |
| **C** | scalar | scalar | scalar | vector |
| **D** | vector | scalar | scalar | scalar |



A-Level Physics: **w25 11**

**2** Two quantities are measured.

$$L = 6.8 \pm 0.1\,\text{cm}$$

$$T = 2.42 \pm 0.08\,\text{s}$$

$L$ and $T$ are related to $X$ by the equation shown.

$$X = \frac{4\pi^2 L}{T^2}$$

What is the calculated value and uncertainty of $X$?

**A** $45.8 \pm 0.2\,\text{cm s}^{-2}$

**B** $45.8 \pm 0.3\,\text{cm s}^{-2}$

**C** $46 \pm 2\,\text{cm s}^{-2}$

**D** $46 \pm 4\,\text{cm s}^{-2}$

**3** What are the SI base units of the watt?

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

**15** A man of weight 600 N stands with both feet flat on the ground.

What is a reasonable estimate of the pressure exerted on the ground by the weight of the man?

**A** $1 \times 10^0\,\text{Pa}$ **B** $1 \times 10^2\,\text{Pa}$ **C** $1 \times 10^4\,\text{Pa}$ **D** $1 \times 10^6\,\text{Pa}$

**22** What are the SI base units of stress?

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

A-Level Physics: **w25 12**

**1** What is a reasonable estimate of the weight of an adult human?

**A** $7 \times 10^0\,\text{N}$ **B** $7 \times 10^2\,\text{N}$ **C** $7 \times 10^4\,\text{N}$ **D** $7 \times 10^6\,\text{N}$