

- 1 A laser emits light of wavelength 600 nm.

What is the distance, expressed as a number of wavelengths, travelled by the light in one second?

- A 5×10^8 B 5×10^{11} C 5×10^{14} D 5×10^{17}

- 2 At temperatures close to 0 K, the specific heat capacity c of a particular solid is given by $c = bT^3$, where T is the thermodynamic temperature and b is a constant characteristic of the solid.

What are the units of constant b , expressed in SI base units?

- A $\text{m}^2 \text{s}^{-2} \text{K}^{-3}$
B $\text{m}^2 \text{s}^{-2} \text{K}^{-4}$
C $\text{kg m}^2 \text{s}^{-2} \text{K}^{-3}$
D $\text{kg m}^2 \text{s}^{-2} \text{K}^{-4}$

- 3 The table shows the x-component and y-component of four force vectors.

Which force vector has the largest magnitude?

	x-component / N	y-component / N
A	2	9
B	3	8
C	4	7
D	5	6

- 4 A student uses a digital ammeter to measure a current. The reading of the ammeter is found to fluctuate between 1.98 A and 2.02 A.

The manufacturer of the ammeter states that any reading has a systematic uncertainty of $\pm 1\%$.

Which value of current should be quoted by the student?

- A $(2.00 \pm 0.01) \text{ A}$
B $(2.00 \pm 0.02) \text{ A}$
C $(2.00 \pm 0.03) \text{ A}$
D $(2.00 \pm 0.04) \text{ A}$