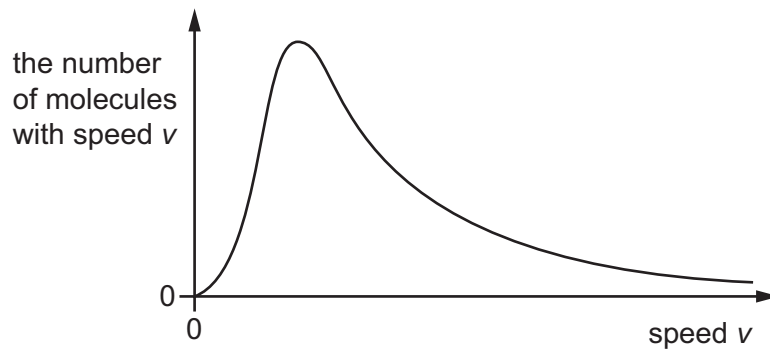


- 21 The graph shows the distribution of speeds for the molecules of a gas at a particular temperature.



Which statement is correct?

- A All the molecules have the same kinetic energy.
  - B The commonest value of speed is also the average speed.
  - C The graph shows that the molecules of a gas are widely spaced apart.
  - D The peak value of the graph would move to the right if the temperature is increased.
- 22 The Mariana Trench in the Pacific Ocean has a depth of about 10 km.
- Assuming that sea water is incompressible and has a density of about  $1020 \text{ kg m}^{-3}$ , what would be the approximate pressure at that depth?
- A  $10^5 \text{ Pa}$
  - B  $10^6 \text{ Pa}$
  - C  $10^7 \text{ Pa}$
  - D  $10^8 \text{ Pa}$
- 23 An elastic material with a Young modulus  $E$  is subjected to a tensile stress  $S$ . Hooke's Law is obeyed.

What is the expression for the elastic energy stored per unit volume of the material?

- A  $\frac{S^2}{2E}$
- B  $\frac{S^2}{E}$
- C  $\frac{E}{2S^2}$
- D  $\frac{2E}{S^2}$

**Space for working**