

- 7 (a) Explain the difference in densities in solids, liquids and gases using ideas of the spacing between molecules.

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.....[3]

- (b) A hydrogen nucleus (proton) may be assumed to be a sphere of radius 1×10^{-15} m. Calculate the density of a hydrogen nucleus.

density = kg m^{-3} [3]

- (c) The density of hydrogen gas in a pressurised cylinder is 4 kg m^{-3} . Suggest a reason why this density is much less than your answer in (b).

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