

**'Try these' p. 108**

1. An example of an amorphous material is glass or soot.
2. Examples of polycrystalline materials are most metals.
3. A crystalline material is the opposite of an amorphous material.
4.  $(2.5 * 10^{-4}) / (2.5 * 10^{-10} \text{ m}) = 1 * 10^6 \text{ m}$
5.  $1 / (2.5 * 10^{-10}) = 4 * 10^9$
6.  $200\text{mm} = 2 * 10^{-1} \text{ m}$   
 $1\mu\text{m} = 1 * 10^{-6} \text{ m}$   
 $(2 * 10^{-1} \text{ m}) / (1 * 10^{-6} \text{ m}) = 2 * 10^5$

Greatest degree of accuracy is  $(1/500) \mu\text{m} = 2 * 10^{-3} \mu\text{m}$

This can be written as 2 nm, and so 2nm is the greatest spacing that the scan can resolve.

7. Each atom in the diagram, where the atoms are modelled as spheres in two dimensions has six neighbouring atoms around it forming a hexagonal lattice.