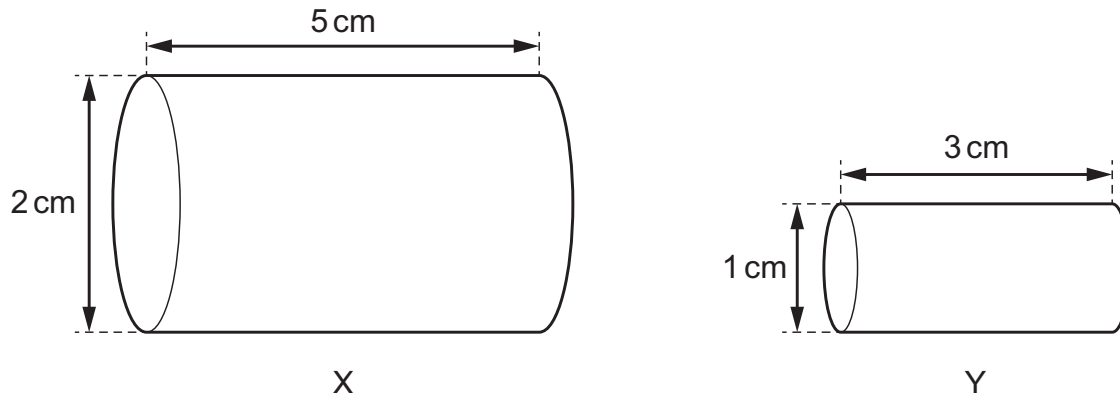


**20** The diagram shows two cylinders of agar.

The agar cylinders are placed into a solution of dye at the same time. The time taken for the dye to diffuse into the centre of each cylinder is recorded.



Which statement explains why the dye reaches the centre of one agar cylinder faster than the other agar cylinder?

- A** The dye reaches the centre of X in a shorter time than the dye reaches the centre of Y because X has a larger surface area to volume ratio.
- B** The dye reaches the centre of X in a shorter time than the dye reaches the centre of Y because X has a larger surface area.
- C** The dye reaches the centre of Y in a shorter time than the dye reaches the centre of X because the dye has a shorter distance to diffuse to the centre.
- D** The dye reaches the centre of Y in a shorter time than the dye reaches the centre of X because Y has a smaller volume.