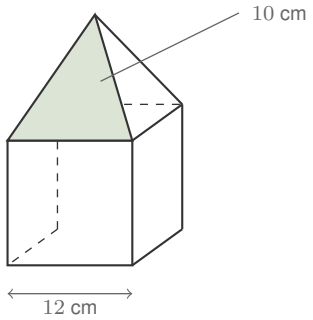
Write down how many faces are on the outside before you work out any areas.
Use the π key unless a question says otherwise. Give answers to one decimal place where they are not exact.

1 A solid is made by standing a square-based pyramid of vertical height 10 cm on a cube of side 12 cm.



(a) How many faces are on the outside? (1)

(b) Find the slant height of the pyramid (2)

(c) Find the area of the five squares (1)

(d) Find the area of the four triangles (2)

(e) Find the total surface area (1)

(7 marks)

2 A solid is made by standing a square-based pyramid of vertical height 12 cm on a cube of side 10 cm. Find its total surface area.

(a) The slant height (2)

(b) The five squares (1)

(c) The four triangles (2)

(d) Total (1)

(6 marks)

3 For the solid in question 2, the cube alone has surface area 600 cm^2 and the pyramid alone has surface area 360 cm^2.

(a) Add these two surface areas together (1)

(b) **Your answer to question 2 was smaller. By how much?** (1)

(c) **Explain where that difference has gone.** (2)

(4 marks)

4 Two cubes of side 6 cm are glued together so that one whole face of each is joined.

(a) How many faces are on the outside? (1)

(b) Find the total surface area of the solid (2)

(c) **Explain why the answer is not 432 cm^2.** (2)

(5 marks)

5 A cube of side 4 cm is stood in the middle of the top face of a cube of side 8 cm.

(a) Find the surface area of the large cube on its own (1)

(b) The small cube covers part of the top of the large one. **Find the area it covers.** (1)

(c) Find the area of the small cube that is on the outside (2)

(d) Find the total surface area of the solid (2)

(6 marks)

6 A square-based pyramid with base 8 cm and slant height 6 cm stands on a cuboid 8 cm by 8 cm by 3 cm.

(a) How many faces are on the outside? (1)

(b) Find the area of the base of the cuboid (1)

(c) Find the area of the four sides of the cuboid (2)

(d) Find the area of the four triangles (2)

(e) Find the total surface area (1)

(7 marks)