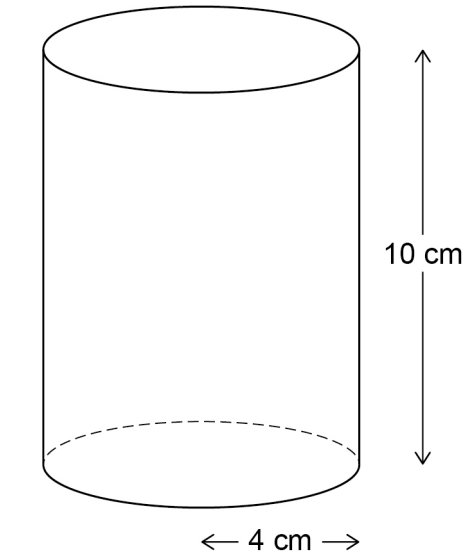
1 Here are two solids.

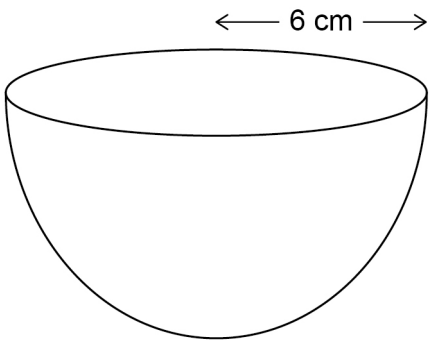
Cylinder

radius 4 cm height 10 cm



Hemisphere

radius 6 cm



volume of a hemisphere $= \frac{2}{3}\pi r^3$ where r is the radius

Which solid has the greater volume?

You **must** show your working.

[4 marks]

Answer _____

2 A quadrilateral *PQRS* has

PQ = 5 cm

QR perpendicular to *PQ*

QR = 7 cm

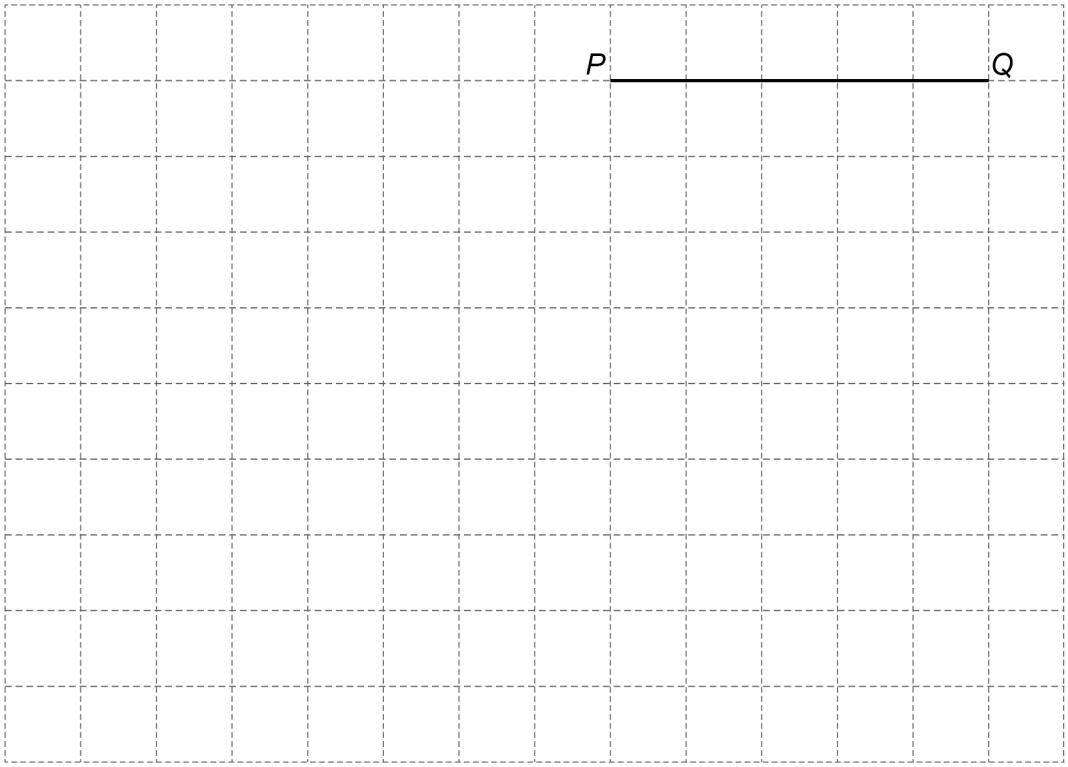
angle *QPS* = 135°

PS = 8.5 cm

On the grid, draw the quadrilateral *PQRS*.

PQ has been drawn for you.

[4 marks]



3 Circle the solid that has six vertices.

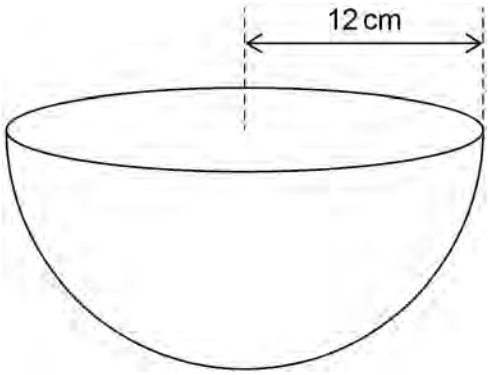
[1 mark]

cone cuboid triangular prism square-based pyramid

4

Volume of a sphere = $\frac{4}{3}\pi r^3$

A bowl is a hemisphere with radius 12 cm



Water is poured into the bowl

at a rate of 325 cm^3 per second

for 8 seconds.

Does the water fill **more than** 70% of the bowl?

You **must** show your working.

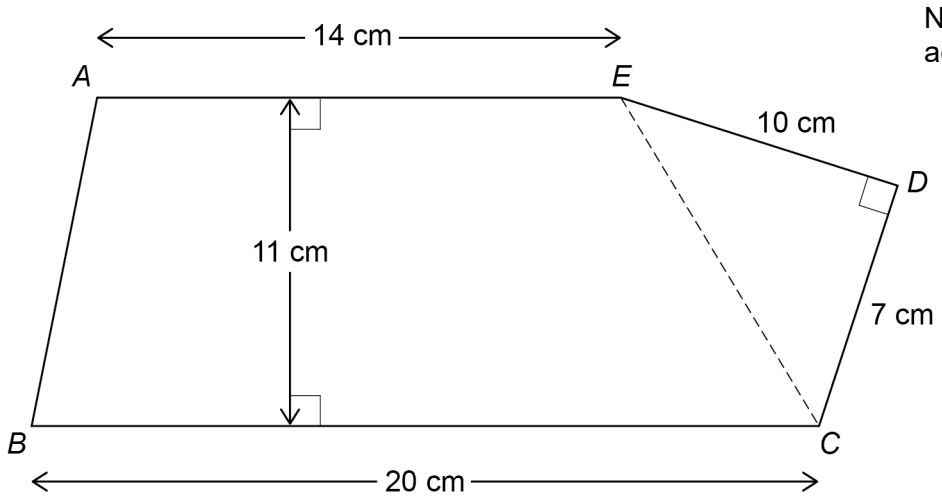
[4 marks]

5 Circle the solid that has six edges.

[1 mark]

triangular-based pyramid	sphere	cube	cylinder

6 *ABCDE* is a pentagon.



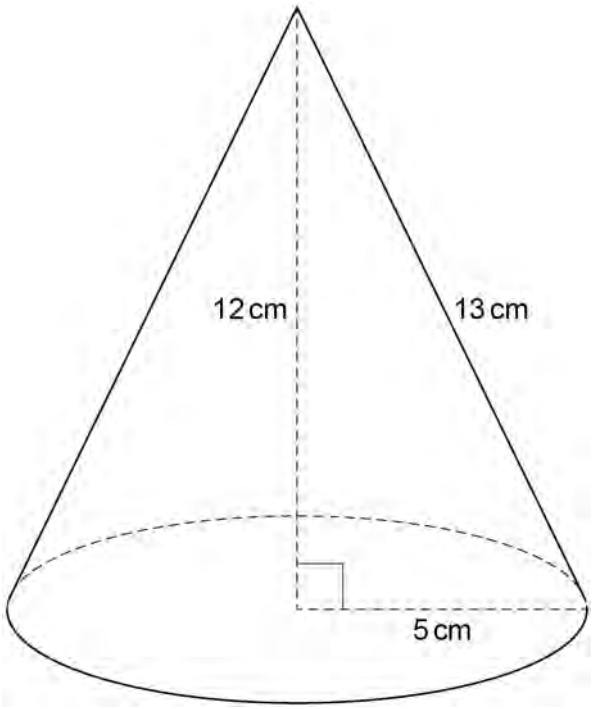
Not drawn accurately

Work out the area of the pentagon.

[3 marks]

Answer _____ cm^2

7 Here is a cone.



7 (a)

Curved surface area of a cone = πrl where r is the radius and l is the slant height

Beth tries to work out the curved surface area in terms of π

Curved surface area of the cone = $\pi \times 5 \times 12$ $= 60\pi \text{ cm}^2$

What mistake has she made?

[1 mark]

7 (b) Adam uses $\pi = 3$ to estimate the area of the **base** of the cone.

Work out his estimate.

[2 marks]

Answer _____ cm^2

7 (c) Beth uses $\pi = 3.14$ to estimate the area of the **base** of the cone.

Is Beth's estimate more than or less than Adam's estimate?

Tick a box.

More than ☐ Less than ☐

Give a reason for your answer.

[1 mark]