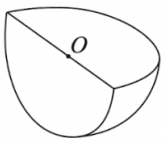
Question 1

In a group of 32 people:
3 speak French but not Spanish
11 speak Spanish but not French
12 speak neither language
Given that a randomly chosen person speaks Spanish, find the probability that they also speak French.

Question 2

Here is a quarter of a solid sphere, with centre O.
The volume of the solid is 4608π cm^3
Find the surface area of the solid in terms of π.

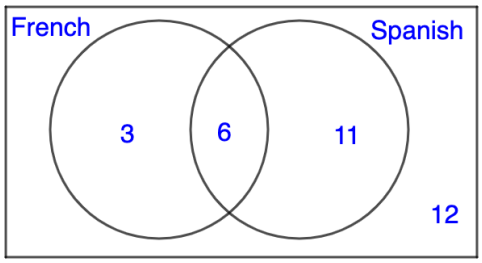


Volume of sphere $= \frac{4}{3}\pi r^3$

Surface area of sphere $= 4\pi r^2$

Question 1

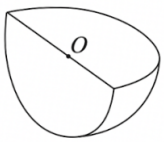
In a group of 32 people:
3 speak French but not Spanish
11 speak Spanish but not French
12 speak neither language
Given that a randomly chosen person speaks Spanish,
find the probability that they also speak French.



The probability is $\frac{6}{17}$

Question 2

Here is a quarter of a solid sphere, with centre O.
The volume of the solid is 4608π cm^3
Find the surface area of the solid in terms of π.



Volume of sphere $= \frac{4}{3}\pi r^3$ Surface area of sphere $= 4\pi r^2$

Volume of whole sphere $= \frac{4}{3}\pi r^3 = 4 \times 4608\pi$

So $r = \sqrt[3]{3 \times 4608} = 24$ cm

Curved surface area $= \frac{4\pi r^2}{4} = \frac{4 \times \pi \times 24^2}{4} = 576\pi$

Flat surface area $= \pi r^2 = \pi \times 24^2 = 576\pi$

$\therefore$ Total surface area $= 1152\pi$ cm^2