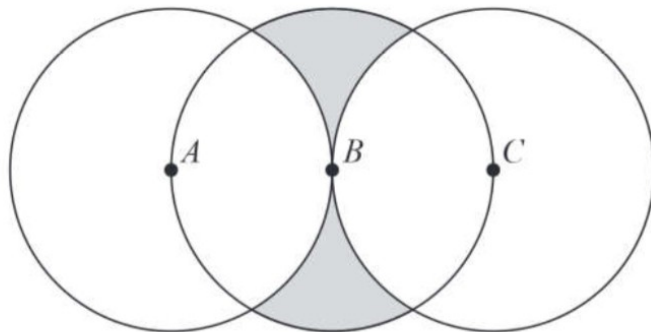


Question 1 (5 Marks)

The diagram shows three circles, each of radius 4 cm.

The centres of the circles are A , B and C such that ABC is a straight line and $AB = BC = 4$ cm.



Work out the total area of the two shaded regions.

Give your answer in terms of π

..... cm²

Question 2 (6 Marks)

The functions f and g are such that

$$f(x) = 3x^2 + 1 \quad \text{for } x > 0 \quad \text{and} \quad g(x) = \frac{4}{x^2} \quad \text{for } x > 0$$

(a) Work out $gf(1)$

.....
(2)

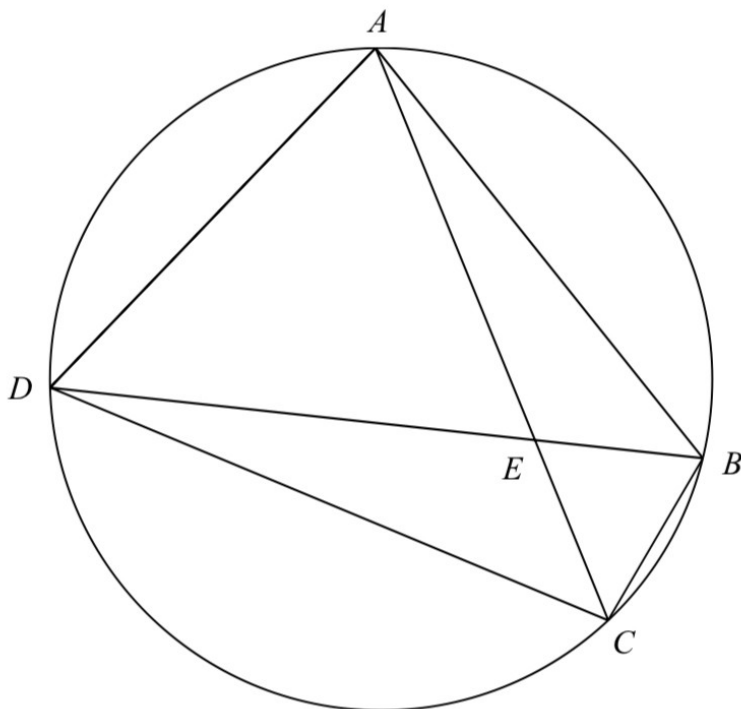
The function h is such that $h = (fg)^{-1}$

(b) Find $h(x)$

.....
(4)

Question 3 (4 Marks)

A , B , C and D are four points on a circle.



AEC and DEB are straight lines.

Triangle AED is an equilateral triangle.

Prove that triangle ABC is congruent to triangle DCB .