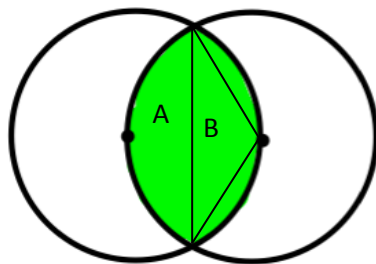


January 2<sup>nd</sup>

2<sup>nd</sup> January

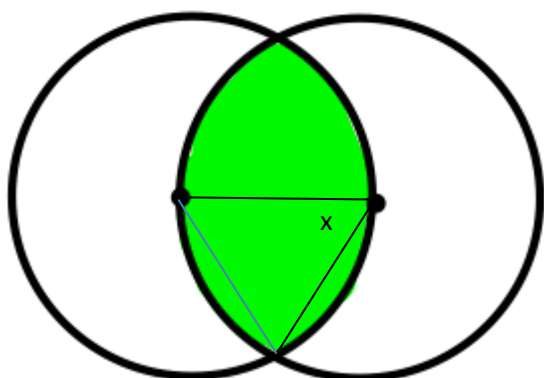
What is the area of the intersection of two circles each of radius 2cm whose centres are 2cm apart?



The area of intersection is twice the area of segment A.

To find the area of a segment, find the area of the sector and subtract the triangle B.

To find these areas, we need the angle subtended, and looking at the diagram below, the triangle is equilateral, so  $x=60^\circ$ , so the angle subtended above is  $120^\circ$



So area of segment =  $\frac{120}{360} \times \pi \times 2^2 - \frac{1}{2} \times 2 \times 2 \times \sin 120^\circ = 2.4567\dots$

So area required is  $2 \times 2.4567\dots =$  **4.91cm<sup>2</sup>**