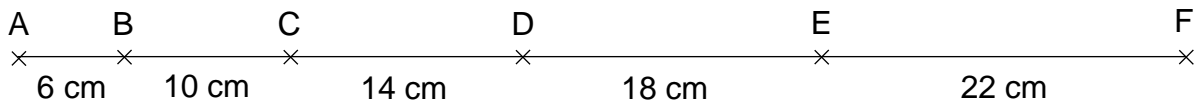


Spicy Question #42



An infinite number of points starting A, B, C, D, ... all lie on the same straight line. The distances between successive points form a linear sequence so that

- AB = 6 cm
- BC = 10 cm
- CD = 14 cm
- DE = 18 cm
- EF = 22 cm
- ...



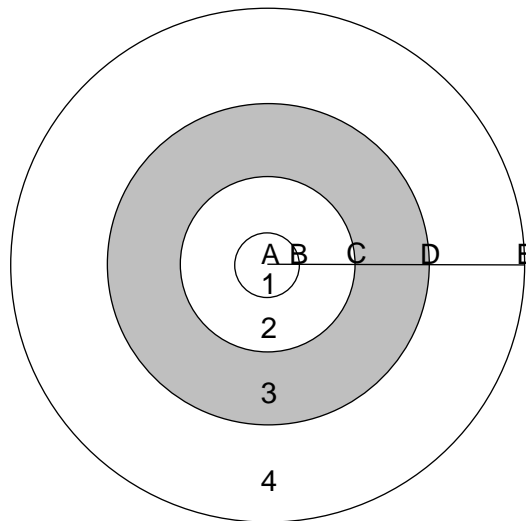
A series of circles are drawn, each with centre A, and radii AB, AC, AD, AE, AF, ...

The first few of these are shown below.

The inner most region is a circle and known as region 1 as shown on the diagram below.

All other regions are rings of increasing size.

For clarity region 3 is shaded on the diagram below.



Work out an expression, in terms of pi for the area on the n^{th} region in cm^2

Give your answer in simplest form.



NO Calculator

SUBMISSION DEADLINE 20/2/23 - 7PM

Video
Solution



All submissions to be emailed to 1stclassmaths@gmail.com

Full terms and conditions: www.1stclassmaths.com/spicy-questions