

Starter 22<sup>nd</sup> September

21.  $\frac{1}{3}$  of the people in a club are men.

The number of men in the club is  $n$ .

(a) Write down an expression, in terms of  $n$ , for the number of people in the club.

.....  
(1)

Two of the people in the club are chosen at random.

The probability that both these people are men is  $\frac{1}{10}$

(b) Calculate the number of people in the club.

Nov 2006 4H

15.

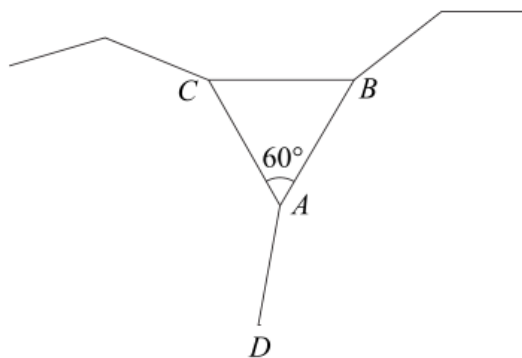


Diagram **NOT**  
accurately drawn

The sides of an equilateral triangle  $ABC$  and two **regular** polygons meet at the point  $A$ .  
 $AB$  and  $AD$  are adjacent sides of a regular 10-sided polygon.  
 $AC$  and  $AD$  are adjacent sides of a regular  $n$ -sided polygon.

Work out the value of  $n$ .

22. Younis spins a biased coin twice.

The probability that it will come down heads both times is 0.36

Calculate the probability that it will come down tails both times.

23. Simplify fully  $\frac{2x^2 - 5x - 12}{4x^2 - 9}$

24.

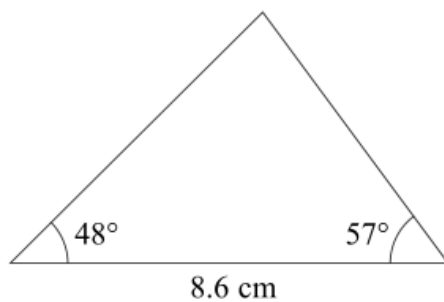


Diagram **NOT**  
accurately drawn

Calculate the area of the triangle.

Give your answer correct to 3 significant figures.