



Welcome to this week's Maths Challenge!

Everyone is encouraged to take part.

There are 3 to 5 merit points for correct solutions, depending on the difficulty of the problem and how impressed the marker is with your solution.

There are house points for students who submit 7 or more correct solutions in one term.

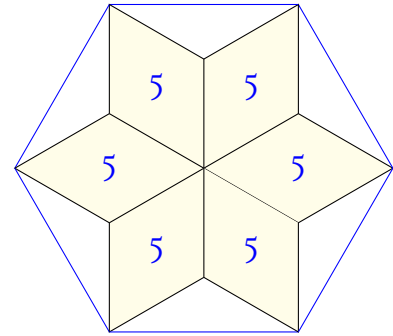
Solutions must be explained in detail, responses with just the answer may be ignored.

Drop your solution in the box in the staffroom by Tuesday.

Year 8 and below

Six identical rhombuses, each of area 5 cm^2 , form a star. The tips of the star are joined to form a regular hexagon, as shown in blue.

What is the area of the hexagon?



Year 9 and above

In a regular pentagram (5-pointed star), (i) show that the angle at each point is 36° .

Thus the sum of the angles in all five points is 180° .

Now, (ii) what is the sum of the angles in all five points of an irregular pentagram, as illustrated in the second diagram?

