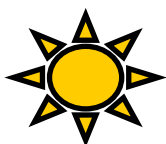


National 4 Homework Exercise 15 Patterns

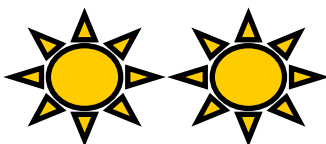
1. Complete all calculations below **without a calculator**. Show all working!

(a) $\frac{3}{4}$ of 96.2g (b) $37.5 \div 300$ (c) 0.742×8000 [4]

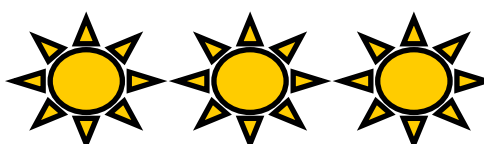
2. Look at the pattern below:-



1 circle
8 triangles



2 circles
16 triangles



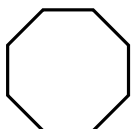
3 circles
24 triangles

- (a) How many extra triangles are needed for every new sun added?
 (b) Copy and complete the table.

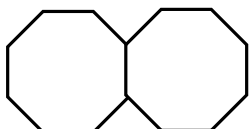
No. of Circles (C)	1	2	3	4	5	6
No. of triangles (T)						

- (c) Write a formula connecting the number of triangles(T) to the number of circles (C).
 (d) Use the formula to decide on the number of triangles when there are 20 circles. [5]

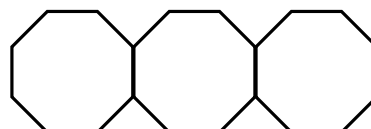
3. A metal fence for a garden is made by joining bars as shown below:-



1 section



2 sections



3 sections

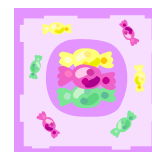
- (a) Complete this table.

Number of sections (s)	1	2	3	4		12
Numbers of iron bars (b)						

- (b) Find a formula for calculating the number of iron bars (b), when you know the number of sections (s).
 (c) A fence has been made by joining 176 iron bars. How many sections are in this fence? [7]

4. Davina has a bag of sweets. It contains three yellow sweets, four purple sweets, two red and six pink sweets. The corner of her bag is torn and sweets fall out.

- (a) What is the probability that this sweet is yellow?
 (b) The sweet that fell out was yellow and she put it in the bin.
 What is the probability that the next sweet to fall out is pink?



[3]