# Following On

Problem One

a. Take any three consecutive (one after another) numbers, for example, 2, 3, and 4.
Multiply the middle number by itself.
Multiply the first and last numbers.
What is the difference between the two products?

b. Find the pattern in this set of equations:

$$1 + 2 + 3 =$$
$$2 + 3 + 4 =$$
$$3 + 4 + 5 =$$

Problem Two

How many white squares and how many blue squares will be in the next figure of this pattern?
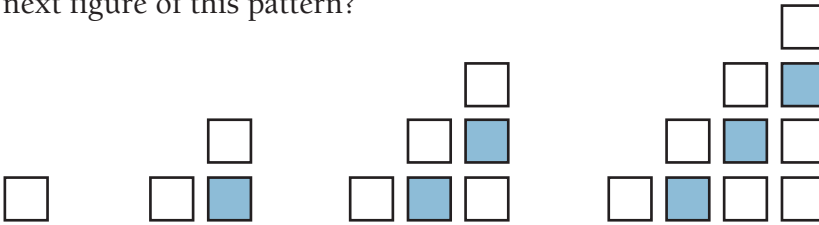
Problem Three

Imagine that you are folding in the flaps of this paper shape.

Fold D in first, followed by C, then A, then lastly B. (Ask your teacher for a photocopy of the shape if you want to fold it.)
Note: Each flap is half the area of the original square.

a. Which of the following will the folded paper look like:

i.   ii.   iii.

b. What other folding patterns can be made with this paper?
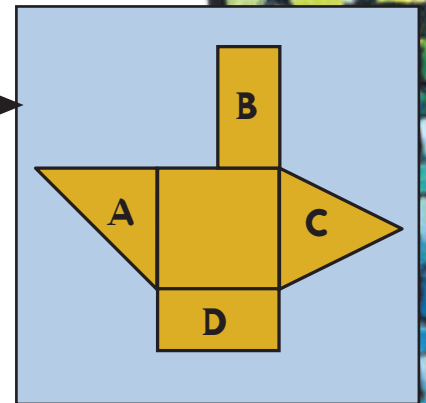
Problem Four

There are 1 093 families belonging to the marae.
If there is an urgent message that must reach every family, a kaumātua rings three families to start the telephone tree.
Those three families each ring three other families, who then each ring three other families, and so on.

How many families pass on the message?