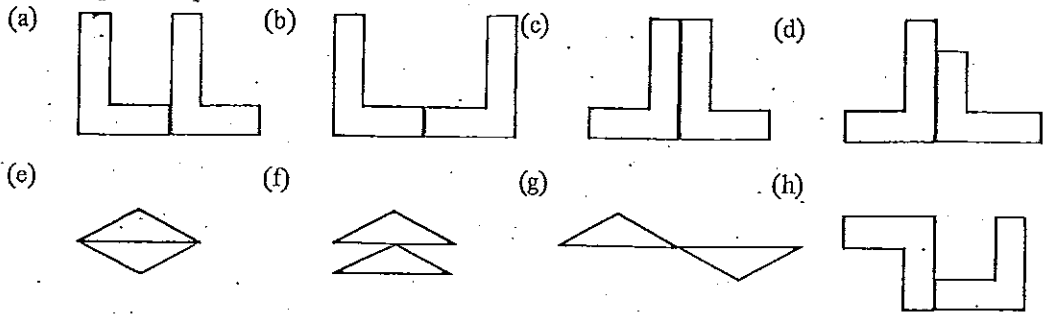


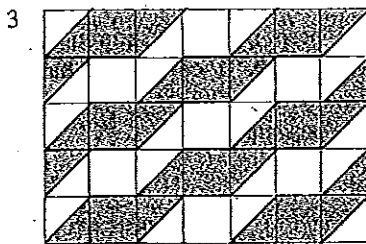
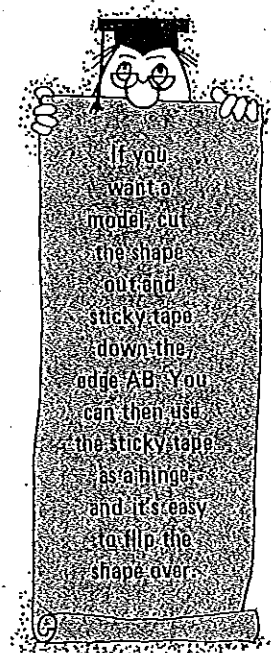
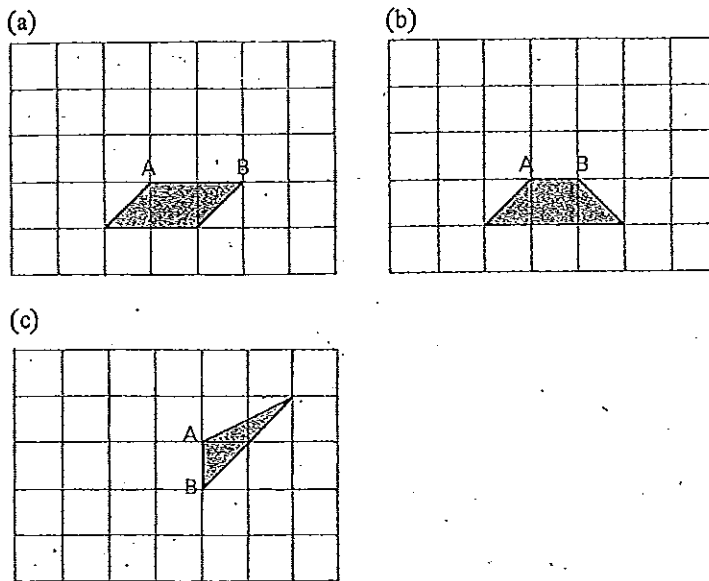
Exercise 4:03 (Practical) TRANSLATION, ROTATION & REFLECTION WORKSHEET

You will need square grid paper, triangular grid paper, pencils and erasers.

1 In each of the following, say if the coloured figure has been produced from the other figure by a slide, spin or flip.

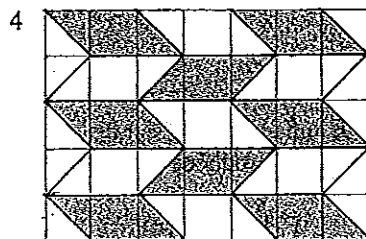


2 Copy the following onto rectangular grid paper and sketch the shape when it is flipped over on side AB.



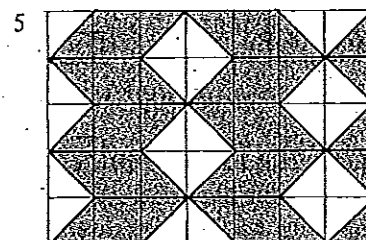
By taking the parallelogram in question 2 (a) and sliding it into new positions this pattern was formed.

By sliding the shapes in 2(b) and 2(c) make a pattern in a similar way.



This pattern was made by taking the parallelogram in question 2(a) and doing a combination of slides and flips.

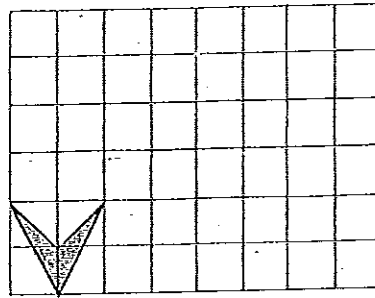
Repeat this procedure using the shapes in 2(b) and 2(c).



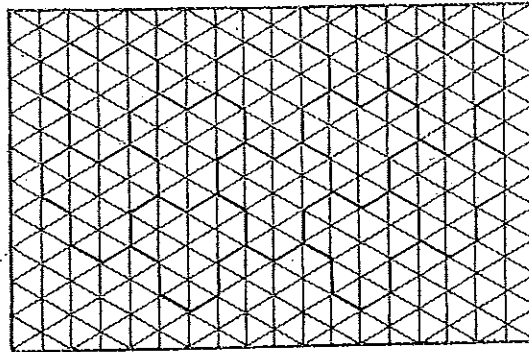
This pattern has been formed by taking a parallelogram and flipping it vertically and horizontally.

Repeat this procedure using the shapes in 2(b) and 2(c).

- 6 The diagram shows a 12 tile pattern. Complete the pattern using the tile given and:
- translation (push or slide)
  - reflection (flip)
  - rotation (spin)
  - a combination of the transformations above.

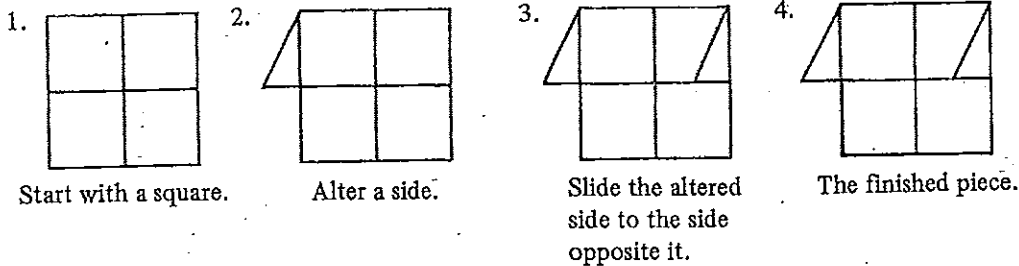


- 7 The pattern shown was drawn on triangular grid paper.
- Could this pattern have been made by translating the tile shape?
  - Could this pattern have been made by reflecting the tile shape?
  - Make another pattern based on this tile shape.



- 8 On a piece of squared paper draw a square with sides of 2 cm. By altering one side and then sliding this side across to the opposite side, design a tile. Use this tile to form a tile pattern.

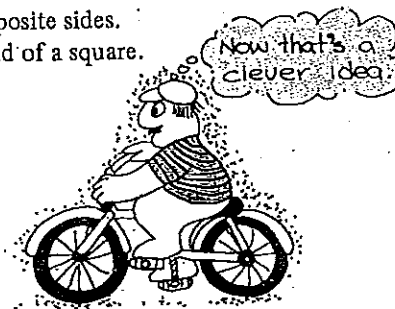
The diagrams below show you how to make a tile.



- 9 (a) Repeat question 8, but this time alter both pairs of opposite sides.  
 (b) Repeat question 8 but start with a parallelogram instead of a square.
- 10 Reflections are not only found in patterns.  
 On the front of an ambulance the word is often painted like this :

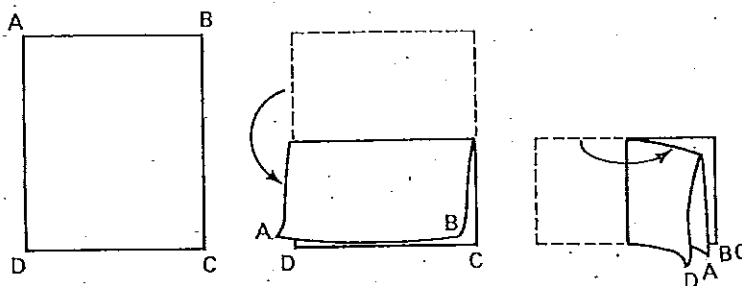
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Why is this so? Can you write the word POLICE in the same way?



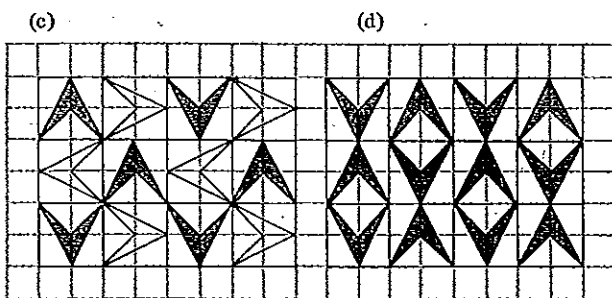
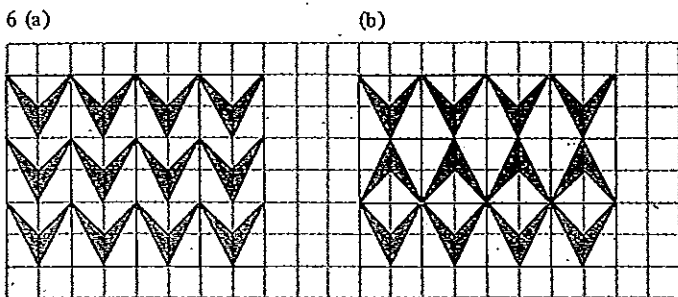
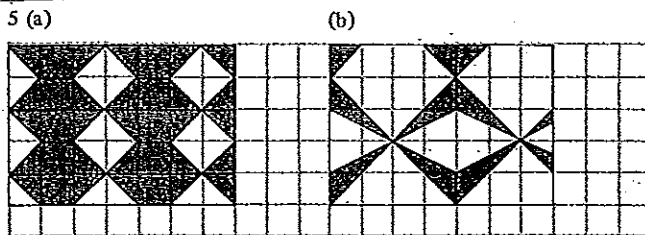
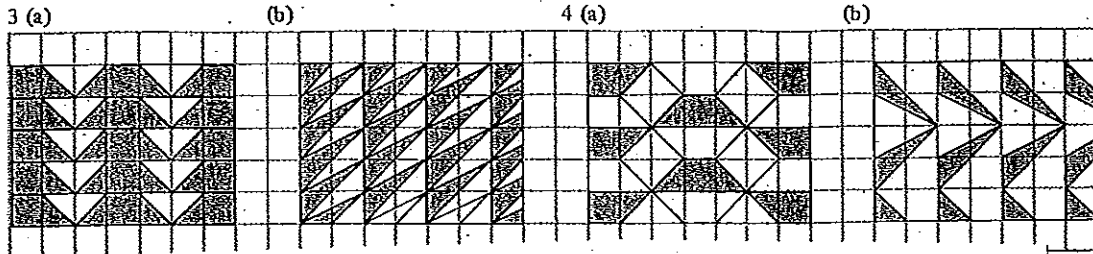
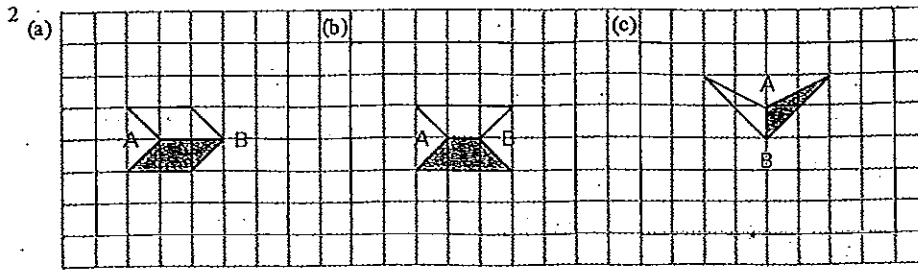
- 11 An eight-page newsletter is produced on a single piece of paper. It is printed on both sides and folded as shown in the diagram.

Find how the pages 1 to 8 should be printed on the sheet *ABCD*.

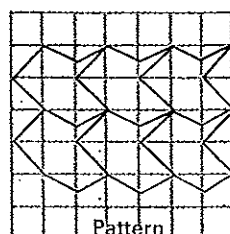
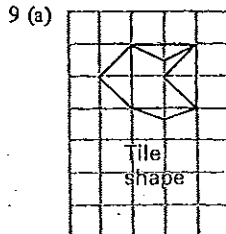
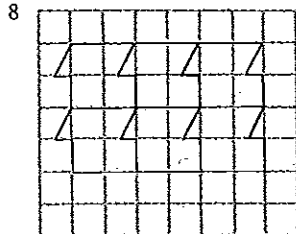


**Exercise 4:03 (Practical)**

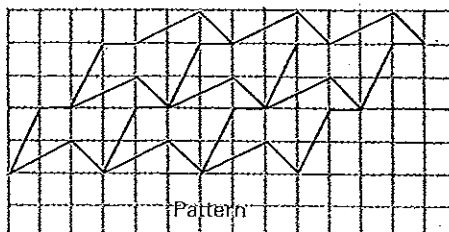
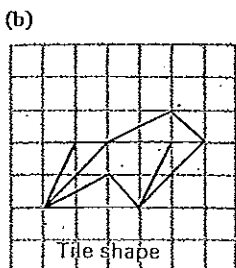
1 (a) slide (b) flip (c) flip (d) turn (e) flip or turn (f) slide (g) turn (h) turn



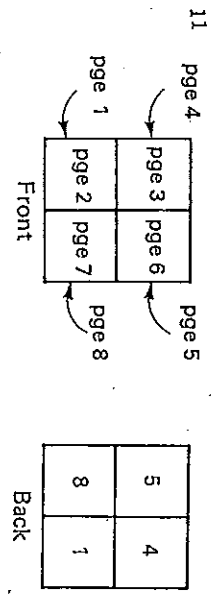
7 (a) yes (b) no (c) There are several different patterns possible.



This is one exam



This is one example



10 The word is written like this so that when you look in your rear vision mirror while driving your car the word will appear in the correct way.

ECILOP