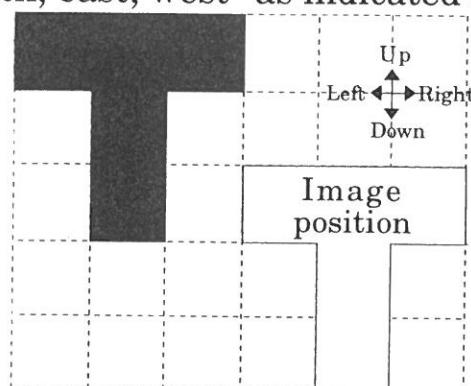


Exercise A

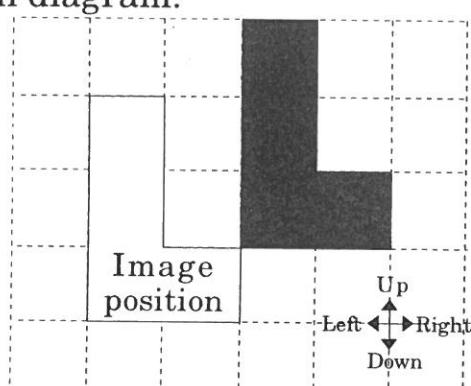
Describe the transformation required to move the shaded shape to the image position in each of the following diagrams.

The grid is a 1 cm grid and use "left, right, up, down" or "north, south, east, west" as indicated on each diagram.

1.

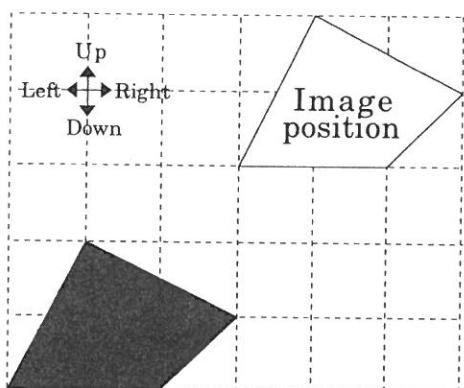


2.

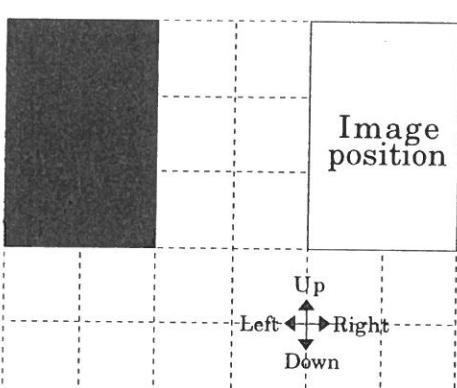


Translation of ____ cm _____
and ____ cm _____.

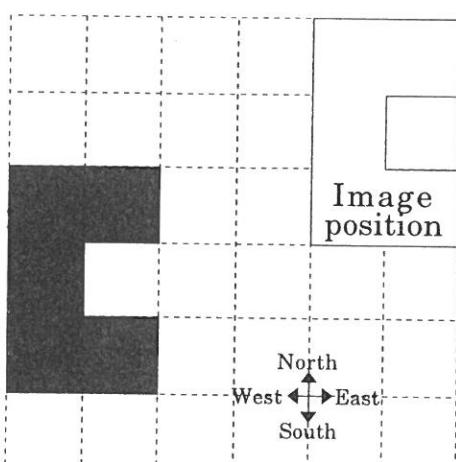
3.



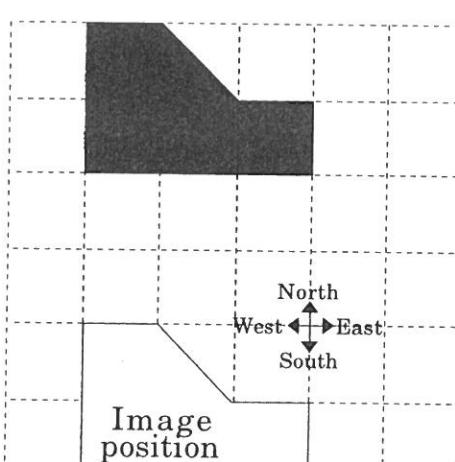
4.



5.

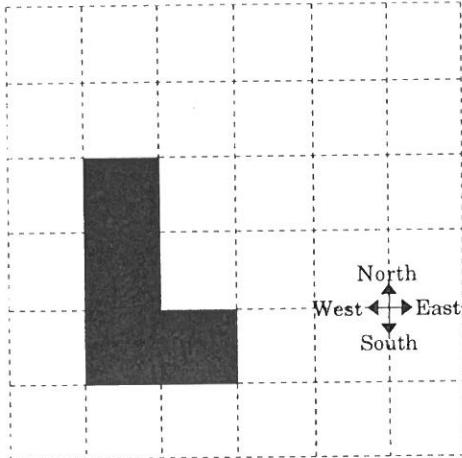


6.

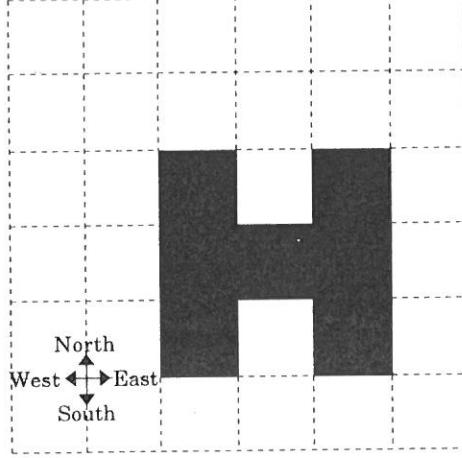


Draw the image position of the shaded shape under the stated transformation.

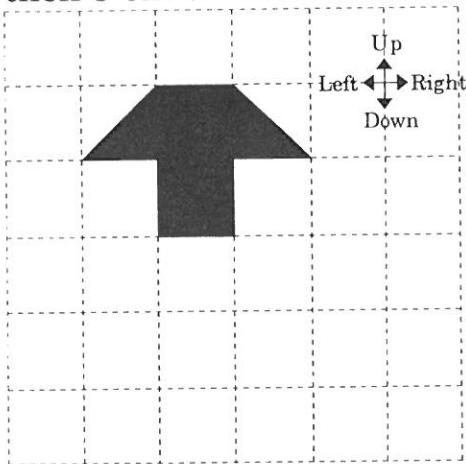
7. Translation of 2 cm east and then 2 cm north.



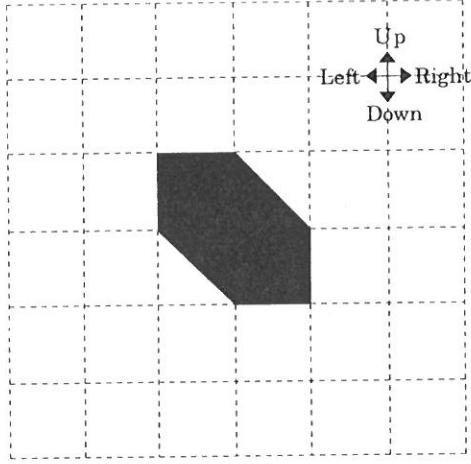
8. Translation of 1 cm west and then 2 cm north.



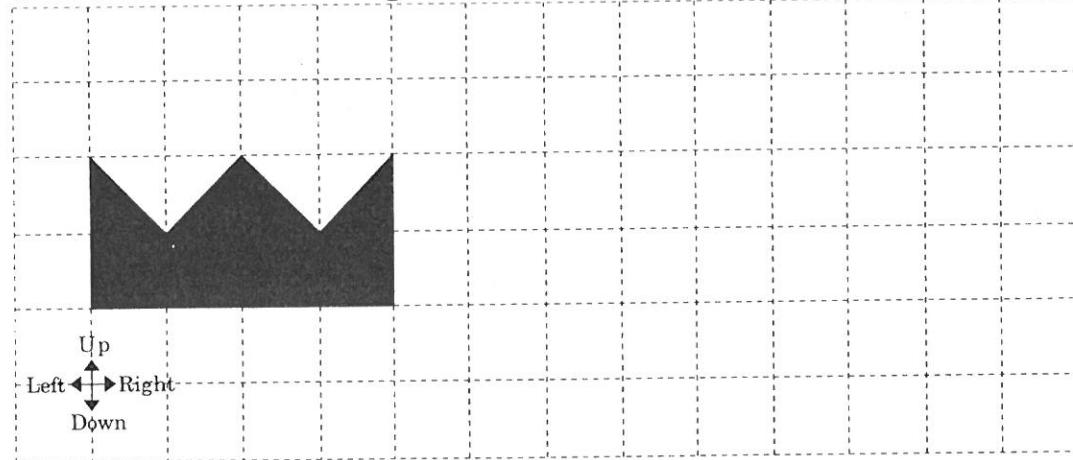
9. Translation of 1 cm left and then 3 cm down.



10. Translation of 2 cm left.

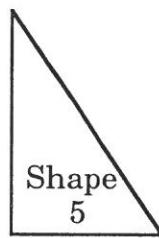
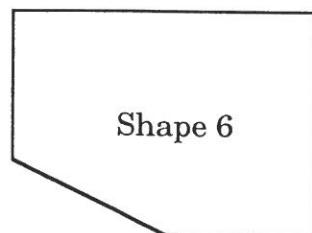
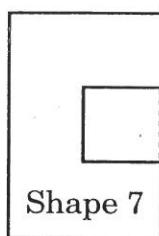
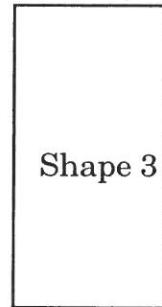
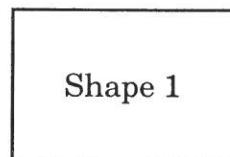
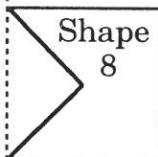
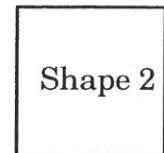
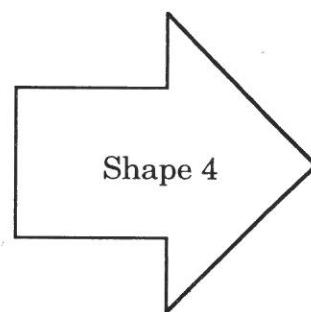
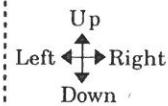


11. Translation of 5 cm right and then 2 cm up.



12. On this page draw the following:

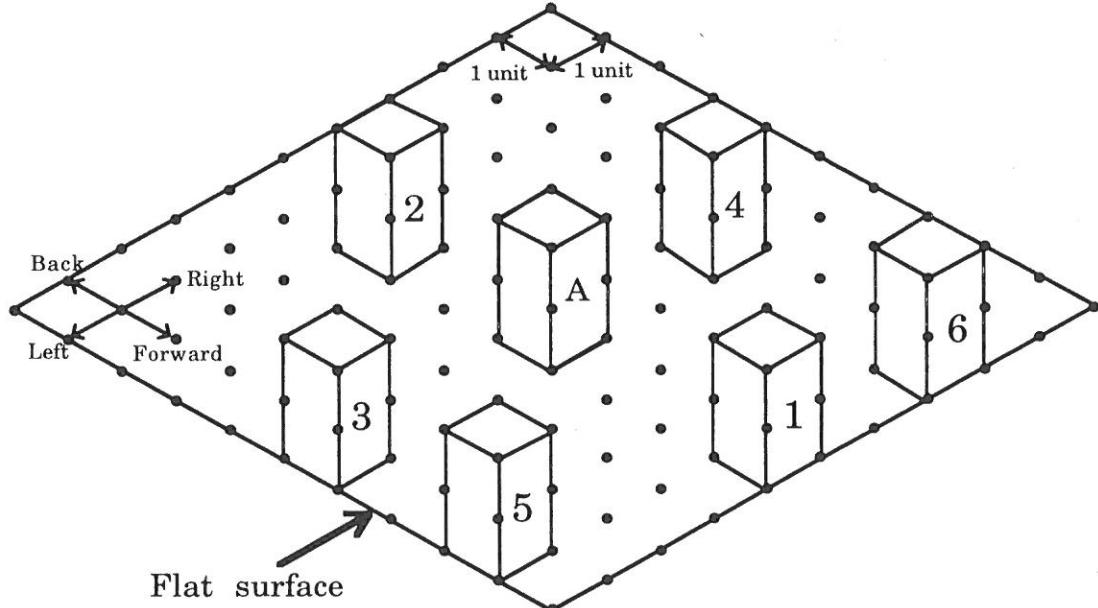
- Shape 1 translated 3 cm right and 6 cm down.
- Shape 2 translated 10 cm left and 2 cm down.
- Shape 3 translated 2 cm left and 7 cm up.
- Shape 4 translated 7 cm right and 11 cm down.
- Shape 5 translated 6 cm right and 12 cm up.
- Shape 6 translated 4 cm right and 7 cm up.
- Shape 7 translated 13 cm left and 5 cm up.
- Shape 8 translated 13 cm right and 1 cm down.



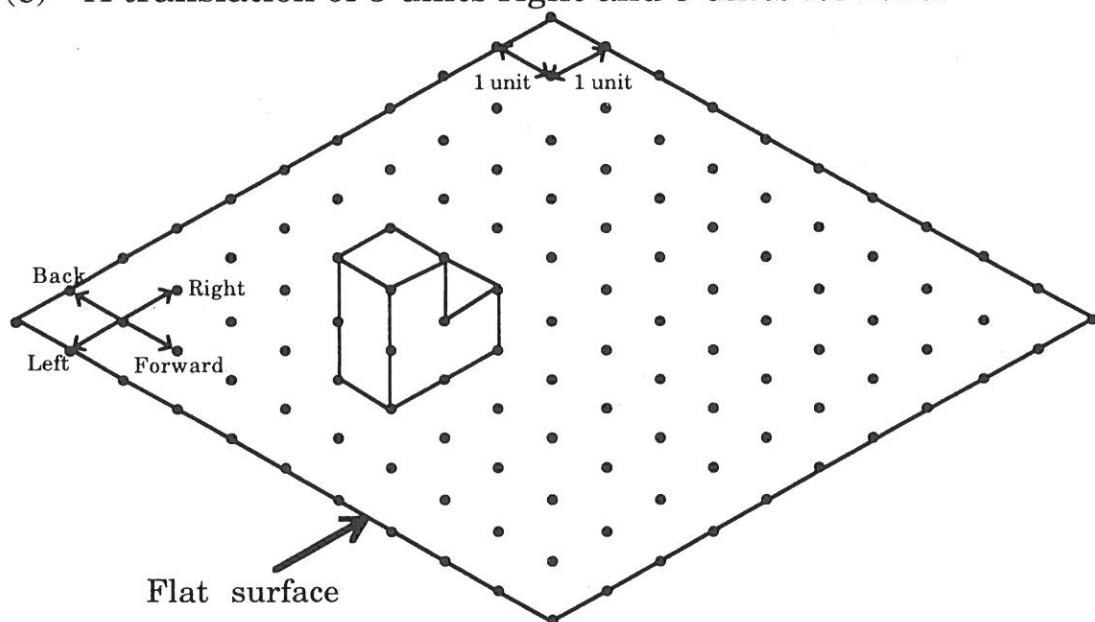
12

13. The diagram below shows shapes sitting on a flat surface. With 1 unit, left, right, forward and back as indicated, state the transformation that takes shape A to each of 1 to 6.

$A \rightarrow 1$ _____ $A \rightarrow 2$ _____
 $A \rightarrow 3$ _____ $A \rightarrow 4$ _____
 $A \rightarrow 5$ _____
 $A \rightarrow 6$ _____



14. The diagram below shows an "L" shape sitting on a flat surface. With 1 unit as indicated, draw the position of the shape after:
- A translation of 5 units right.
 - A translation of 2 units right and 4 units forward.
 - A translation of 2 units left and 5 units forward.
 - A translation of 3 units right and 2 units back.
 - A translation of 5 units right and 5 units forward.



S 4.3: Recognises translations ... S 15c.4

S 5.3: Visualises and sketches the effect of straightforward translations ... S 15c.5

S 5.2: Visualises ... 3D shapes & ... produces conventional mathematical drawings of them. S 15b.5

S 6.2: Interprets and meets specifications requiring the accurate construction and placement of figures and objects including manipulating shapes and arrangements mentally. S 15b.6