

UNIT 7 *Transformations*

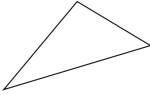
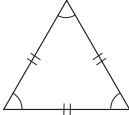
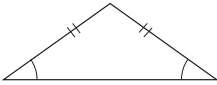
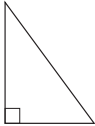
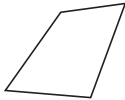


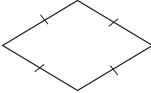
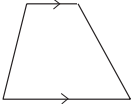
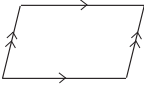
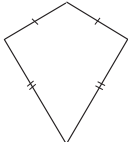
Overhead Slides

Overhead Slides

- 7.1 Shapes
- 7.2 Congruent or Similar?
- 7.3 Translations
- 7.4 Enlargements: Scale Factors
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OS 7.1

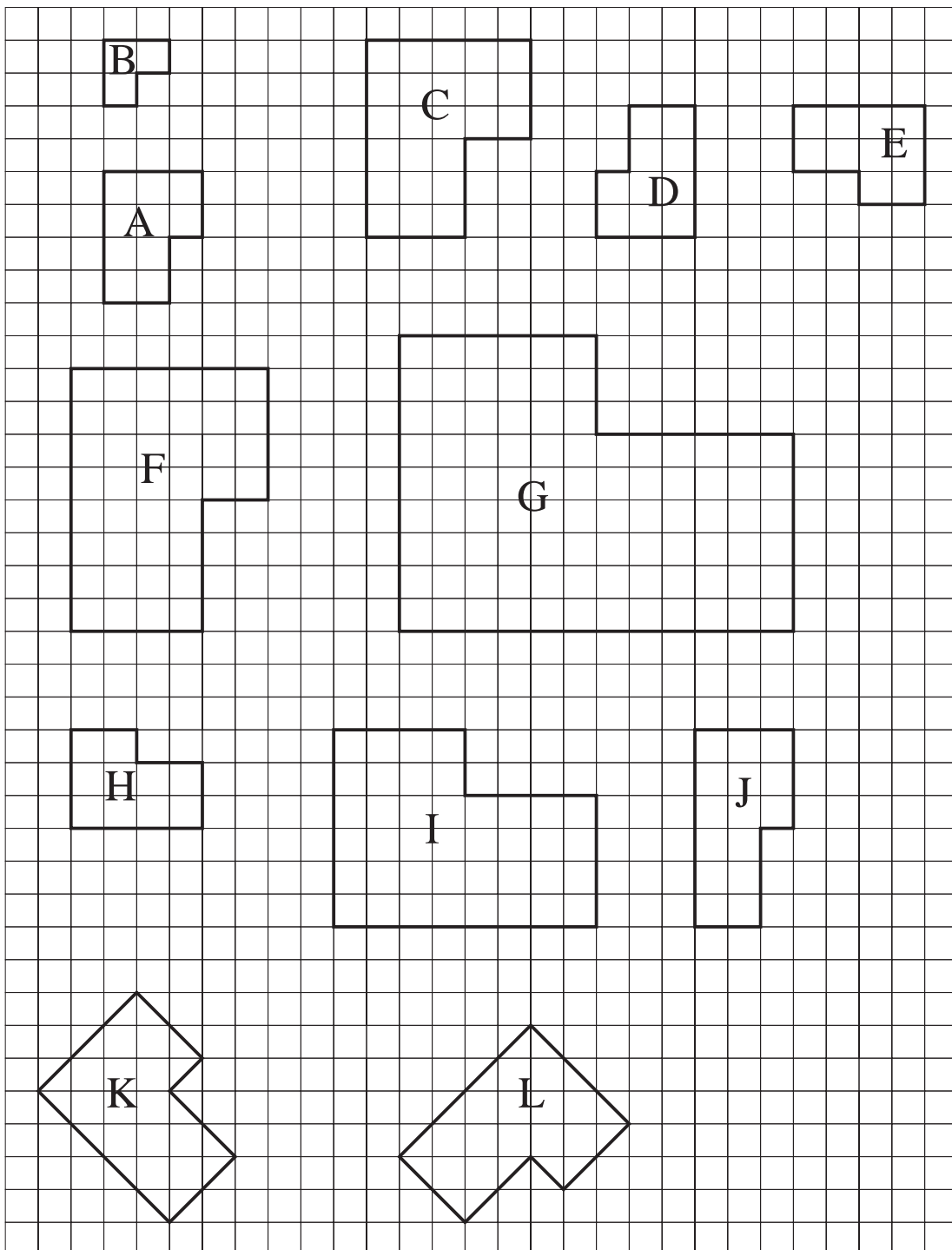
Shapes

<i>NAME</i>	<i>ILLUSTRATION</i>	<i>NOTES</i>
<i>Triangle</i>		3 straight sides
<i>Equilateral Triangle</i>		3 equal sides and 3 equal angles ($= 60^\circ$)
<i>Isosceles Triangle</i>		2 equal sides and 2 equal angles
<i>Right-angled Triangle</i>		One angle $= 90^\circ$
<i>Quadrilateral</i>		4 straight sides
<i>Square</i>		4 equal sides and 4 right angles
<i>Rectangle</i>		Opposite sides equal and 4 right angles
<i>Rhombus</i>		4 equal sides; opposite sides parallel
<i>Trapezium</i>		One pair of opposite sides parallel
<i>Parallelogram</i>		Both pairs of opposite sides equal and parallel
<i>Kite</i>		Two pairs of adjacent sides equal

OS 7.2

Congruent or Similar?

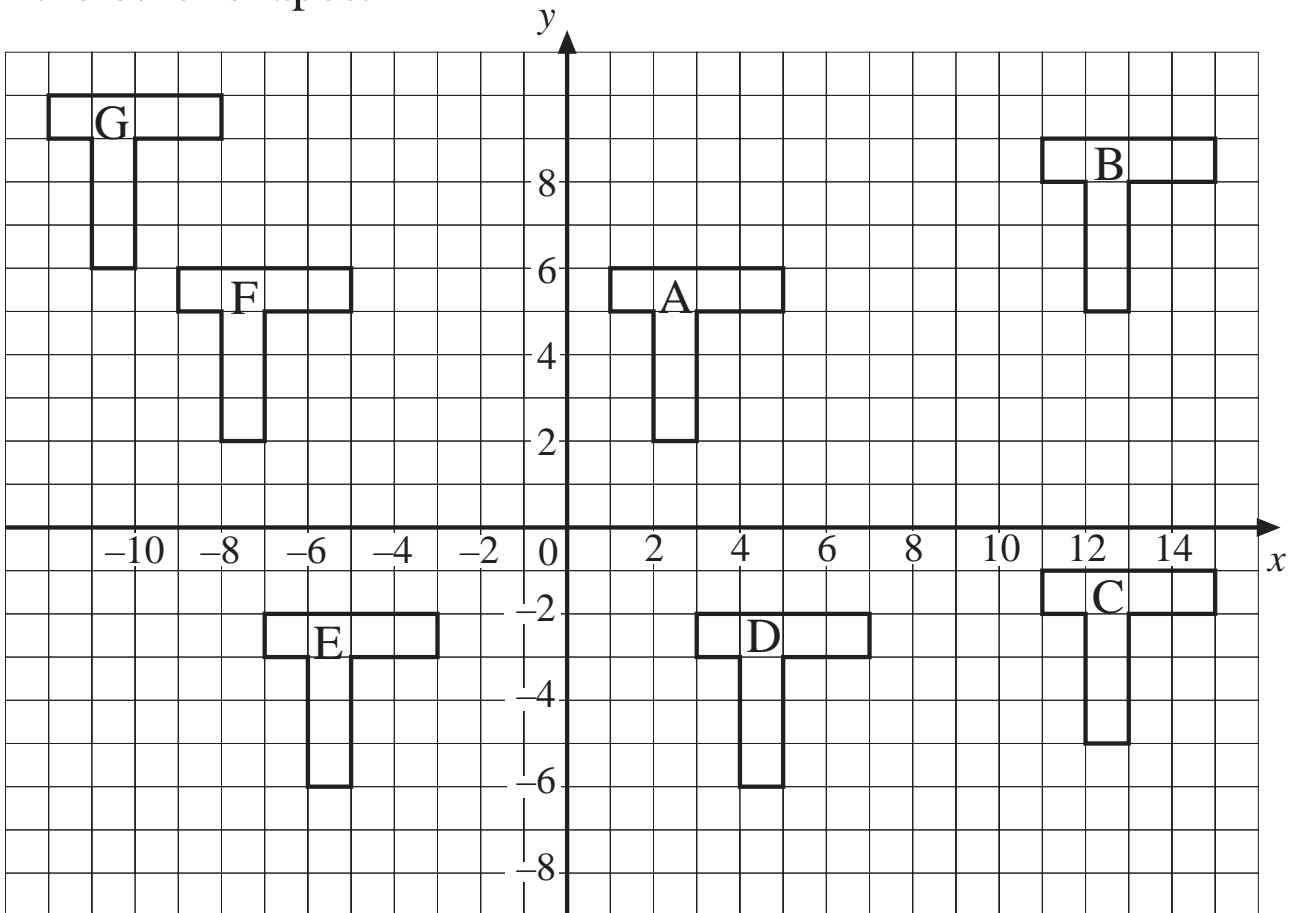
1. Which of the following shapes are *congruent* to A ?
2. Which of the following shapes are *similar* to A ?



OS 7.3

Translations

Describe the translations that will take shape A to each of the other shapes.



$$A \rightarrow B \left(\begin{array}{c} \\ \\ \end{array} \right)$$

$$A \rightarrow C \left(\begin{array}{c} \\ \\ \end{array} \right)$$

$$A \rightarrow D \left(\begin{array}{c} \\ \\ \end{array} \right)$$

$$A \rightarrow E \left(\begin{array}{c} \\ \\ \end{array} \right)$$

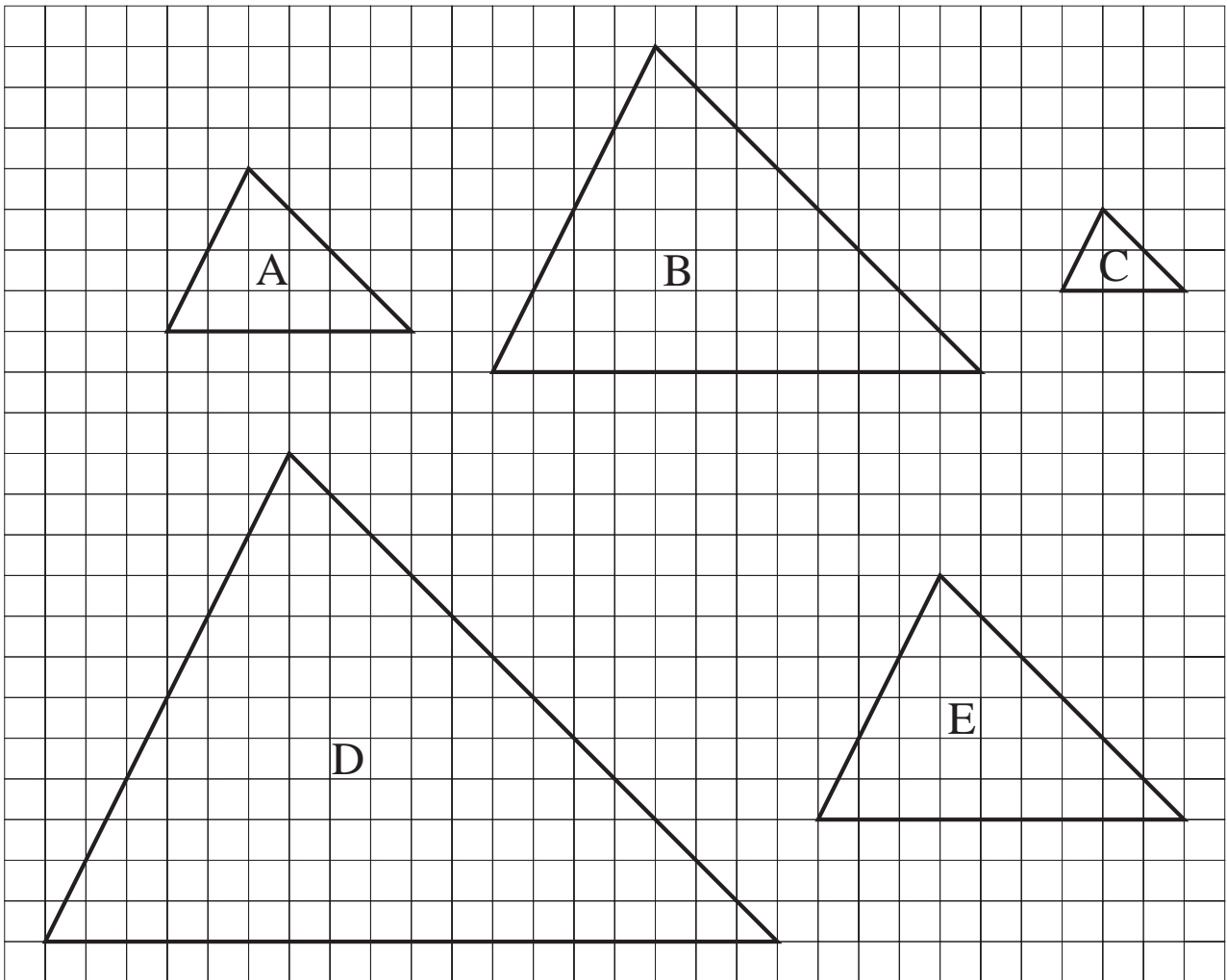
$$A \rightarrow F \left(\begin{array}{c} \\ \\ \end{array} \right)$$

$$A \rightarrow G \left(\begin{array}{c} \\ \\ \end{array} \right)$$

OS 7.4

Enlargements: Scale Factor

The triangle A has been enlarged to give the other triangles.



A \rightarrow B Scale factor

A \rightarrow C Scale factor

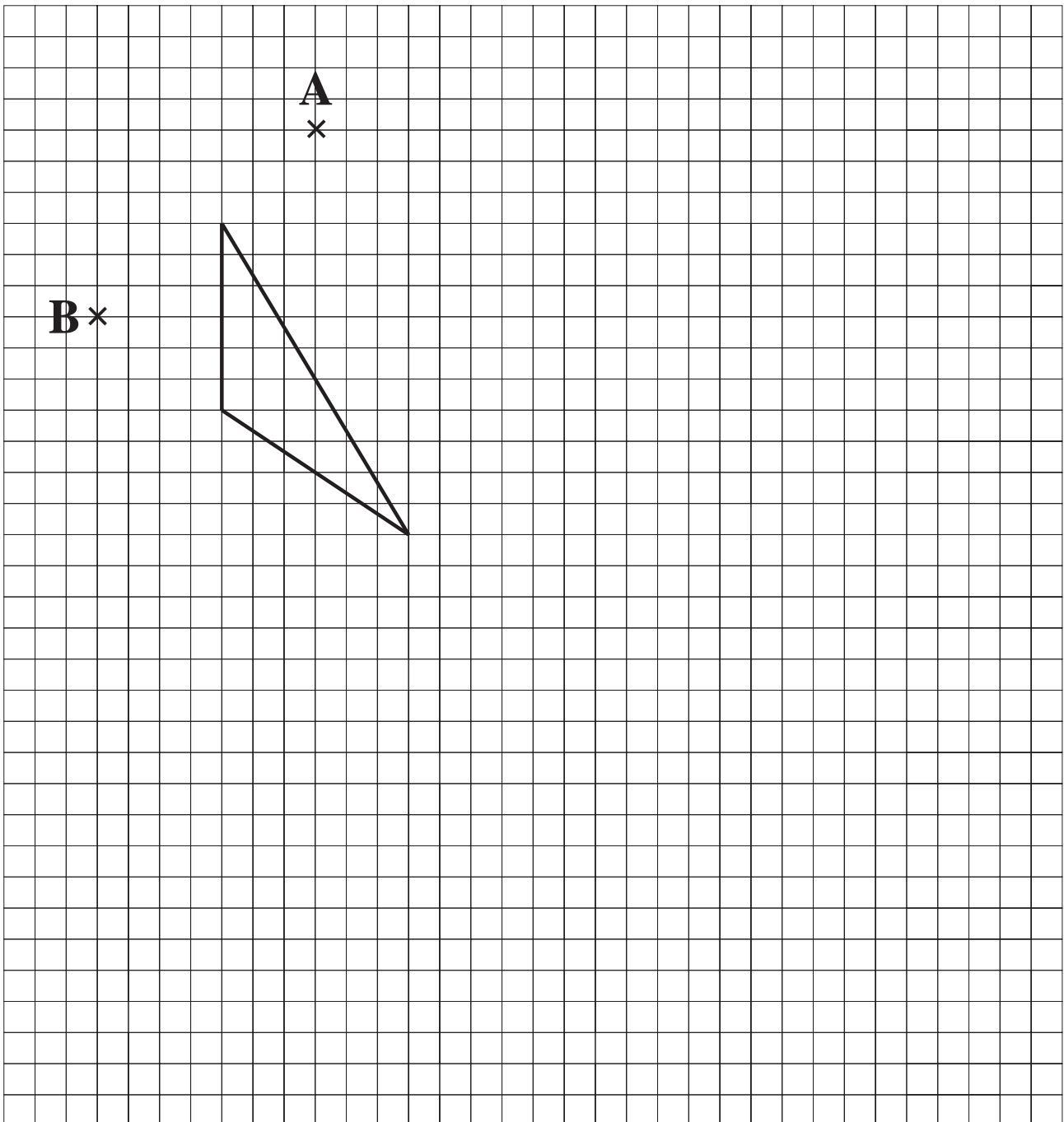
A \rightarrow D Scale factor

A \rightarrow E Scale factor

OS 7.5*Centre of Enlargement*

Enlarge the triangle shown with:

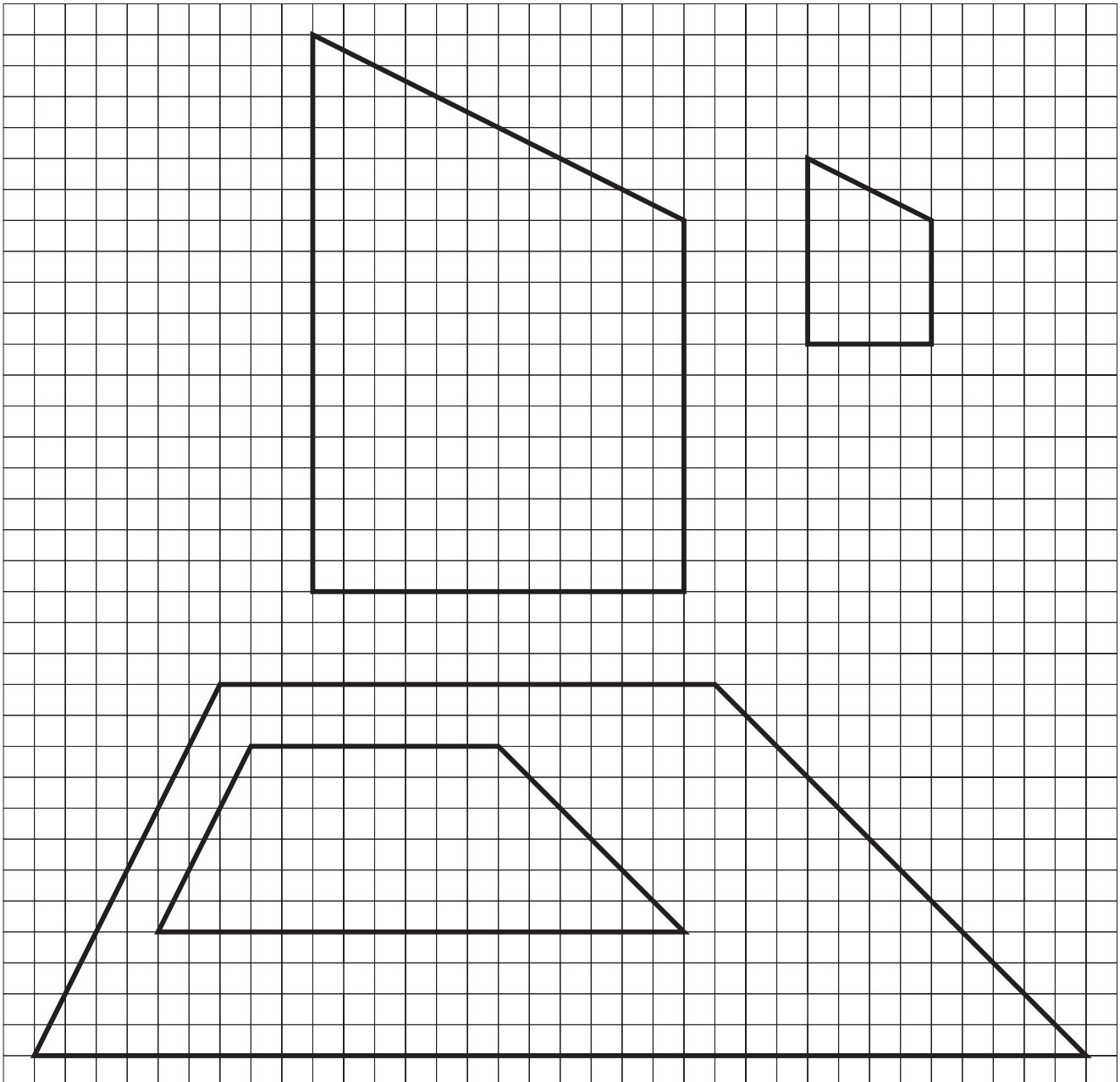
- (a) centre of enlargement **A** and scale factor 2,
- (b) centre of enlargement **B** and scale factor 3.



OS 7.6

Finding the Centre of Enlargement

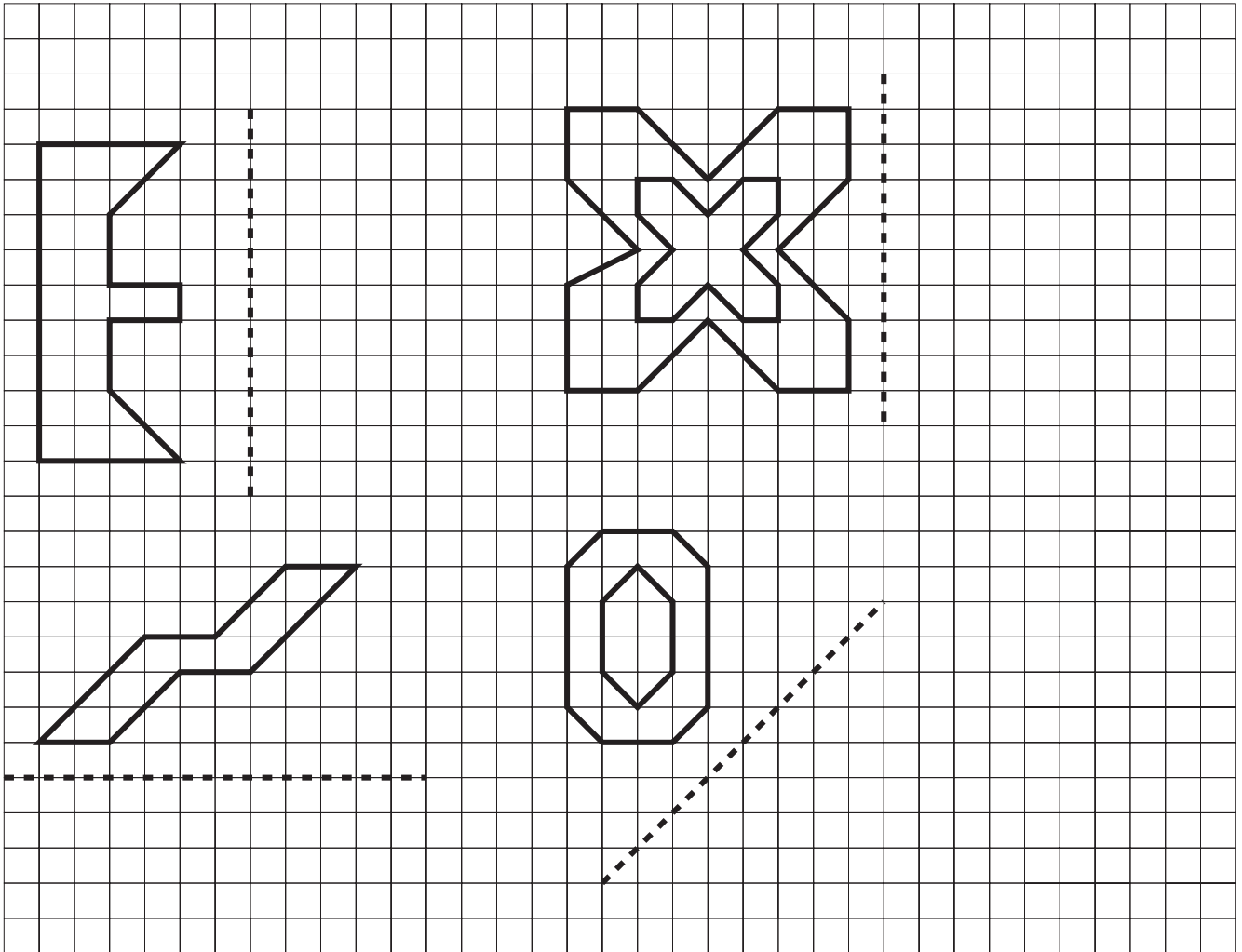
Determine the centre of enlargement for each of the enlargements shown and also find the scale factor:



OS 7.7

Reflections

Draw the reflection of each shape in the mirror line shown:

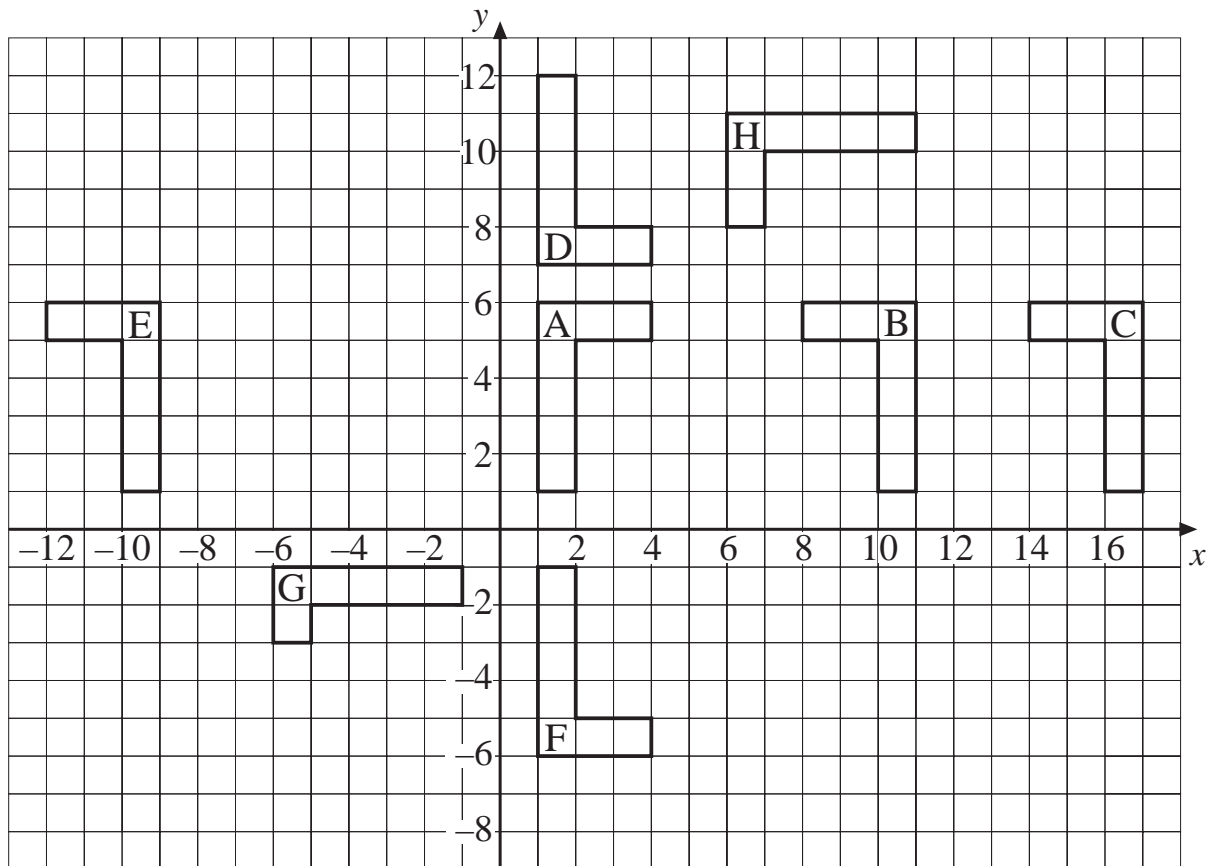


OS 7.8

Reflections: Equation of Mirror Line

The diagram shows several reflections of the shape A.

Write down the equation of the mirror line for each reflection.



A → B

A → E

A → C

A → F

A → D

A → G

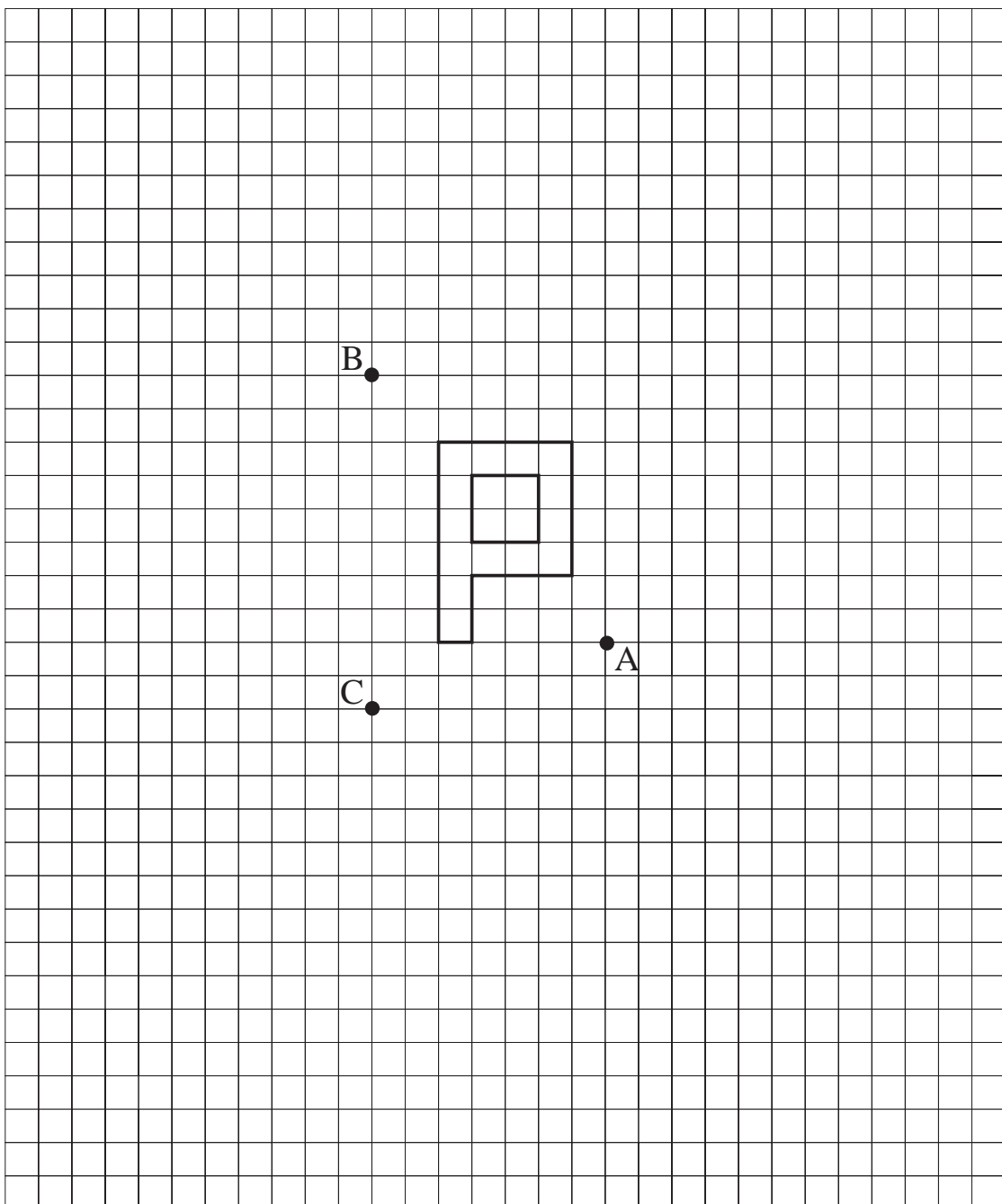
A → H

OS 7.9

Rotations

Rotate the shape shown through,

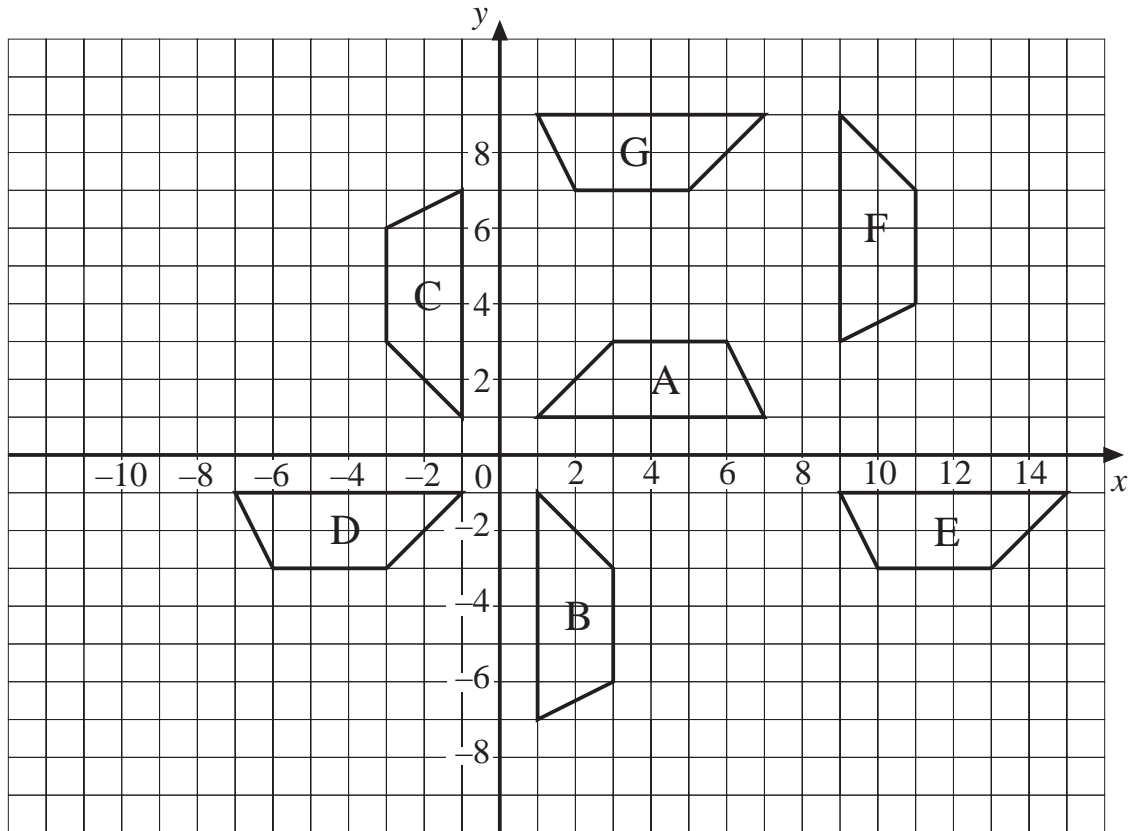
- (a) 90° clockwise around the point A,
- (b) 90° anticlockwise around the point B,
- (c) 180° around the point C.



OS 7.10

Describing Rotations

The shape A is rotated to give the other shapes in the diagram. Describe each rotation.



A → B

A → C

A → D

A → E

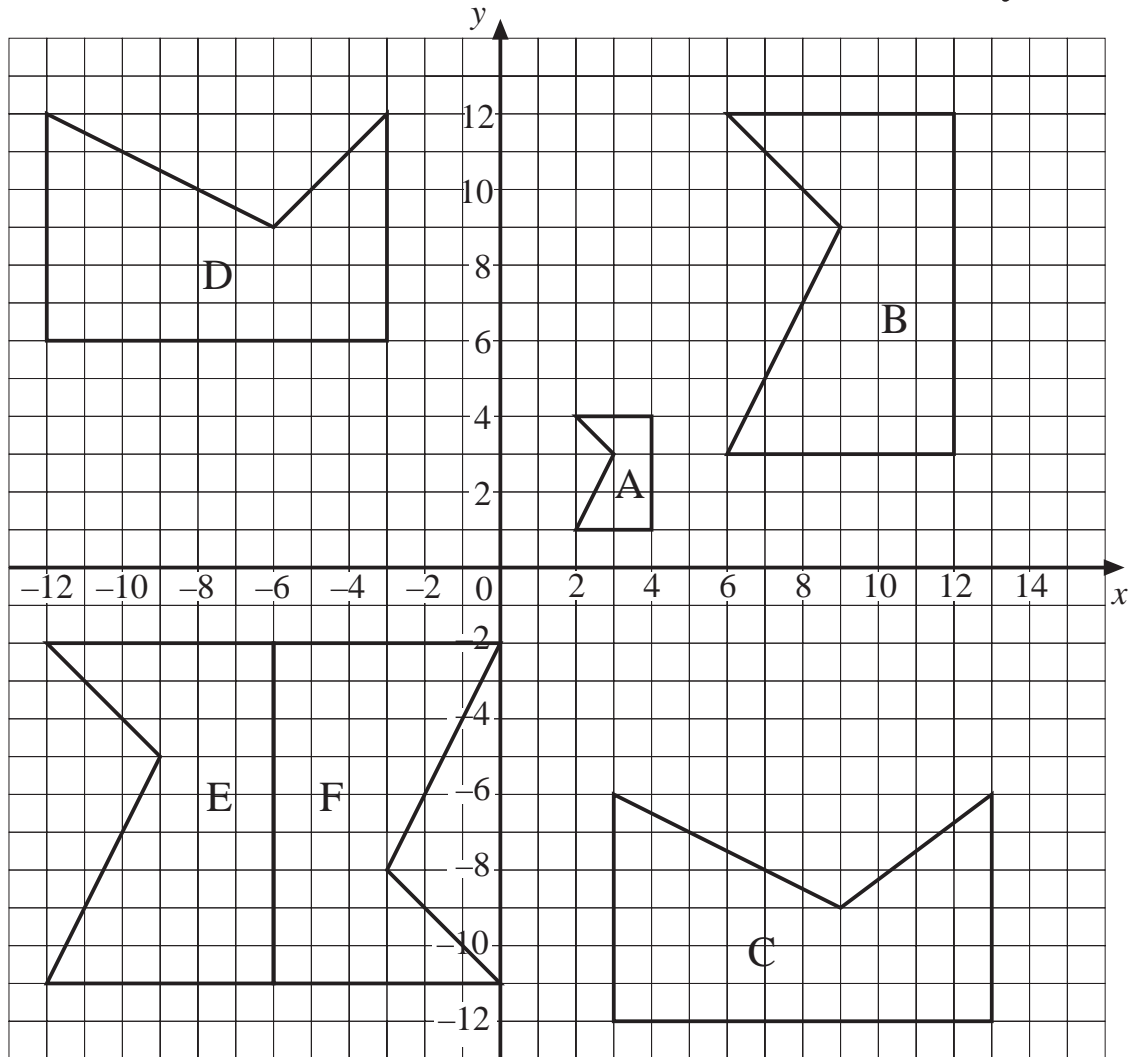
A → F

A → G

OS 7.11

Combined Transformations

The shape A moves to the shape F by a number of transformations. Describe each transformation fully.



A → B

B → C

C → D

D → E

E → F