Translation

- Describing a translation
- Translating a shape
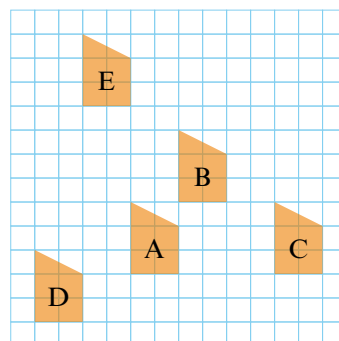
Keywords

You should know

explanation 1

1 The translation D → A is right 4 and up 2.

Describe these translations in the same way.

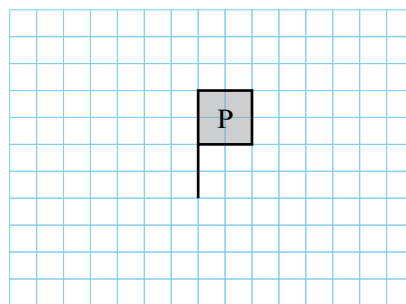a   A → B   b   A → C

c   B → A   d   C → A

e   D → B   f   A → E

g   A → D   h   E → A

2 Shapes Q, R, S and T are translations of shape P.

Copy shape P and use these instructions to draw shapes Q, R, S and T.

a   P → Q is right 5 and up 2.

b   P → R is left 4 and up 1.

c   P → S is right 1 and down 3.

d   P → T is left 3 and down 2.

3 P is mapped to Q by the translation 3 squares right and 2 squares down.

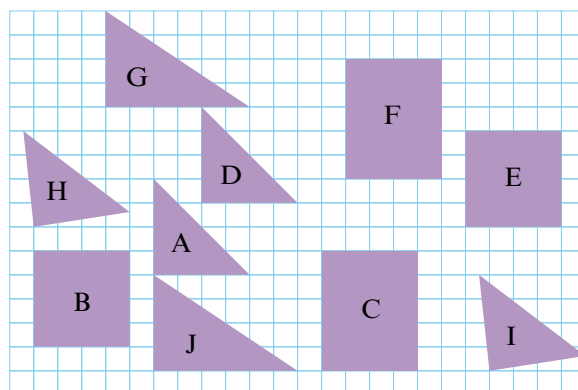Describe the translation that maps Q to P.

4 In this diagram, each shape can be mapped to one other by a translation.

Copy and complete the mappings below.

Each ☐ stands for one of the shapes A to H.

Describe each translation. The first one has been done for you.

a A → ☐

Answer: A → D. 2 units right and 3 units up.

b ☐ → F **c** J → ☐ **d** ☐ → I **e** B → ☐

5 In this diagram, triangle ABC is mapped to triangle DEF by a translation.
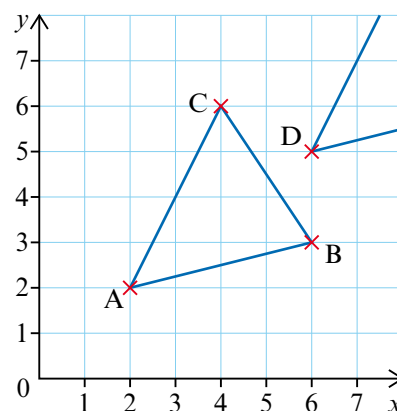
The coordinates of A are (1, 3).

a What are the coordinates of D?

b Describe the translation of triangle ABC to triangle DEF.
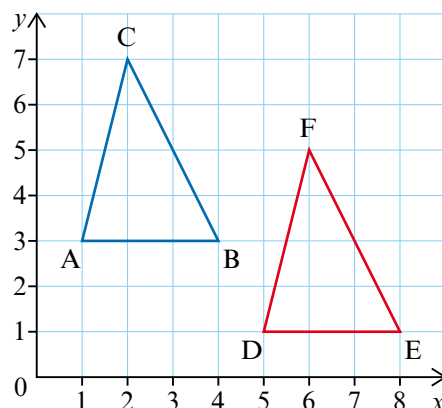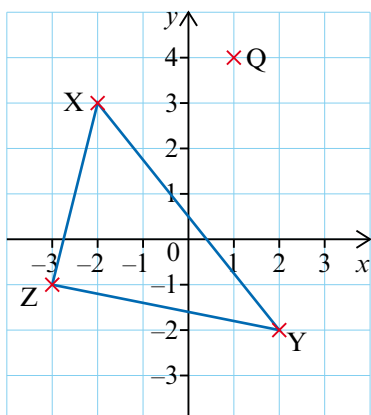
6 In this diagram, triangle ABC is mapped to triangle DEF by a translation.

a Write down the coordinates of A and D.

b Describe the translation.
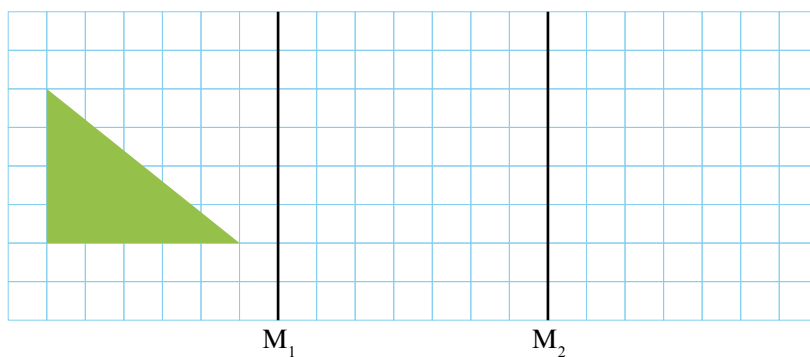
c Find the coordinates of E and F.

7 In this diagram, triangle XYZ is mapped to triangle PQR by a translation.

a Write down the coordinates of Y and Q.

b Describe the translation.

c Find the coordinates of P and R.

8 The diagram shows a triangle and two mirror lines M_1 and M_2.

a Reflect the triangle in M_1.

b Reflect the image in M_2.

c Describe the translation that is equivalent to the two reflections.