Past-paper walk-through

Transformations ▪ E7.1

eXercise

Questions in this set

- 0580/21 N25 Q5 ▪ 5 marks
- 0580/42 N25 Q8 ▪ 12 marks
- 0580/43 N25 Q7 ▪ 3 marks
- 0580/22 J25 Q5 ▪ 5 marks
- 0580/41 J25 Q4 ▪ 7 marks

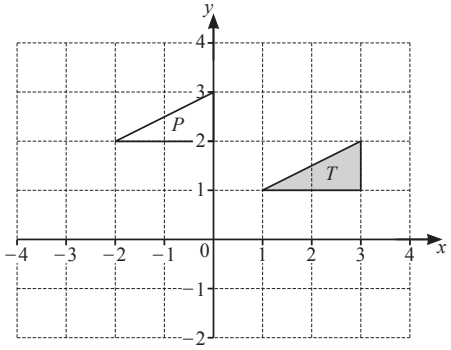
Reading the mark scheme

- **B1** a mark that stands on its own – the point is either made or not.
- **M1** a *method* mark: the right approach, even if the number is wrong.
- **A1** an *answer* mark, and it usually needs its M mark first.
- **C1** a working mark on the way to the answer.
- // separates answers the examiner accepts equally.
- **ecf** = error carried forward: a later part is marked on your own earlier answer.
- **owtte** = "or words to that effect" – the wording need not match.

Question 5

0580/21 N25 ▪ Q5 ▪ 5 marks

5



Question 5

(a) Describe fully the **single** transformation that maps triangle T onto triangle P.

Question 5

(b) Draw the image of triangle T after an enlargement of scale factor 2, centre (3, 3). [2]

Solution 5

(a) Mark scheme

- Translation
- 3
- 1
- −
- (
-)
- (
-)

Solution 5

- (
-)
- 2 B1 for each

Solution 5

(b)

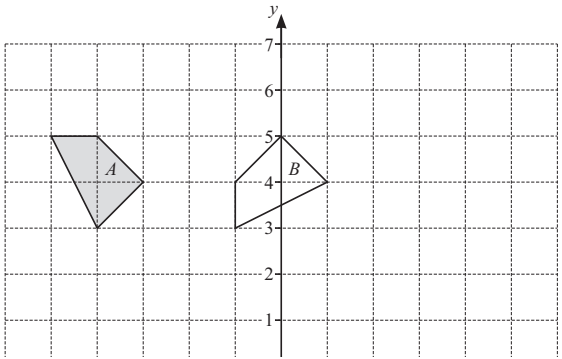
Mark scheme

- Triangle at (3, 1) , (3, –1) (–1, –1)
- 2 B1 for correct size and orientation but
- wrong position

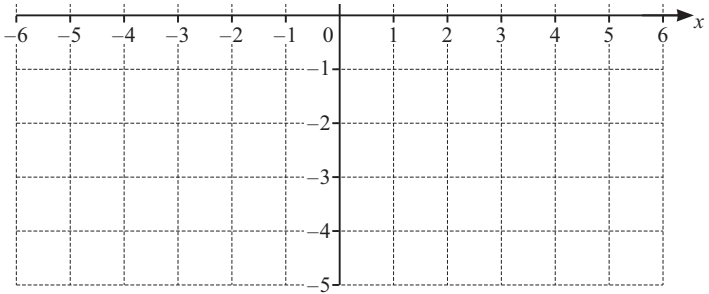
Question 8

0580/42 N25 ▪ Q8 ▪ 12 marks

8



Question 8



(a) On the diagram, draw the image of

(i) shape A after a translation by the vector $\begin{pmatrix} 1 \\ -7 \end{pmatrix}$ [2]

(ii) shape A after a reflection in the line $y = x + 1$. [3]

Question 8

(b) Describe fully the **single** transformation that maps shape A onto shape B.

Question 8

Solution 8

(a)(i) Mark scheme

- Image drawn at (–2, –3),
- (–3, –2), (–4, –2) and
- (–3, –4)
- 2 B1 for translation by 1
- k
- ()
- ()
- ()

Solution 8

- or by
- 7
- k
- (
-)
- (
-)
- −
- (
-)

Solution 8

(a)(ii)

Mark scheme

- Image drawn at (2, –3),
- (3, –2), (4, –3) and (4, –4)
- 3 B2 for correct size and orientation but wrong position
- or for quadrilateral with 3 correct vertices
- or B1 for $y = x + 1$ drawn soi long enough to be
- recognised

Solution 8

(b)

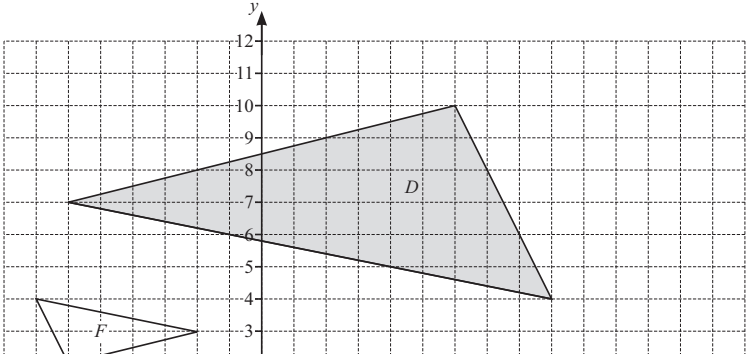
Mark scheme

- Rotation
- 90° anticlockwise oe
- (–2, 6)
- 3 B1 for each

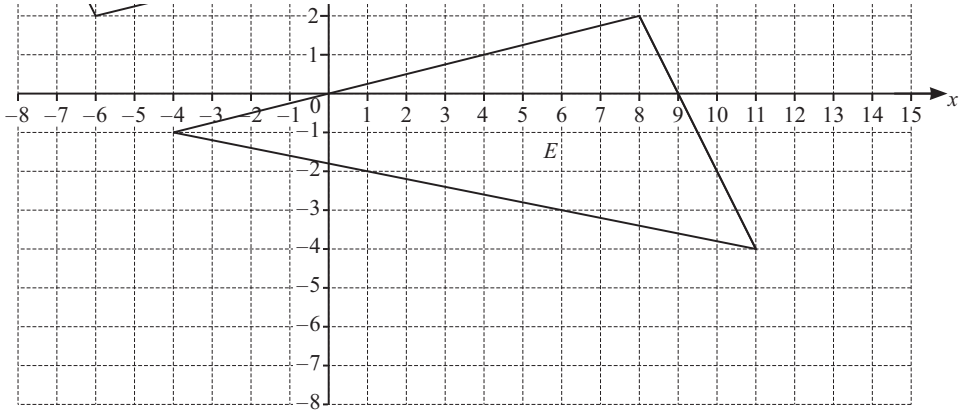
Question 7

0580/43 N25 ▪ Q7 ▪ 3 marks

7



Question 7



(a) Describe fully the **single** transformation that maps triangle D onto triangle E.

Question 7

(b) Describe fully the **single** transformation that maps triangle D onto triangle F.

Question 7

Solution 7

(a) Mark scheme

- Translation
- 2
- 8
- (
-)
- (
-)
- −

Solution 7

- (
-)
- 2 B1 for translation B1
- for 2/8 (
-)
- (
-)
- −
- (
-)

Solution 7

(b) Mark scheme

- Enlargement

cale factor

- 1
- 3
- —

centre (–3, 4)

- 3 B1 for each
- 8

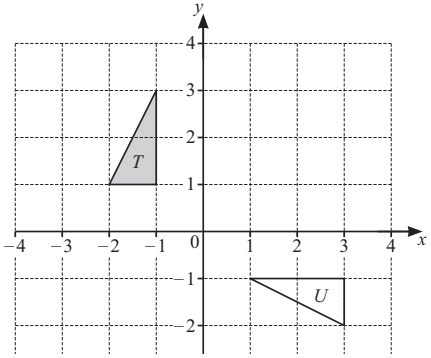
Solution 7

- 320% of 10
- m 33% of m 1
- 3 of m m
- 2 B1 for three in the correct order

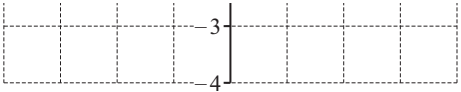
Question 5

0580/22 J25 ▪ Q5 ▪ 5 marks

5



Question 5



(a) Translate triangle T by the vector $\begin{pmatrix} 0 \\ -2 \end{pmatrix}$. [1]

(b) Describe fully the **single** transformation that maps triangle T onto triangle U.

Solution 5

(a)

Mark scheme

- Triangle at (–1, –1), (–1, 1), (–2, –1)
- 1

Solution 5

(b)

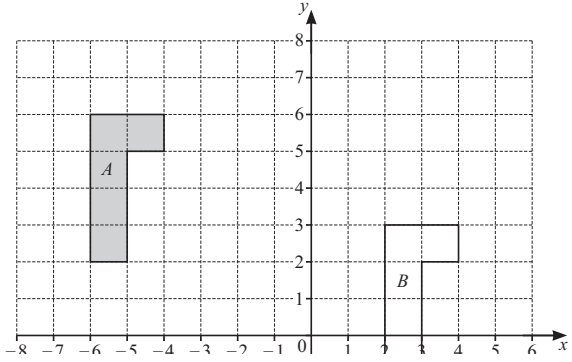
Mark scheme

- Rotation
- 90 anticlockwise oe
- (2, 2)
- 3 B1 for each

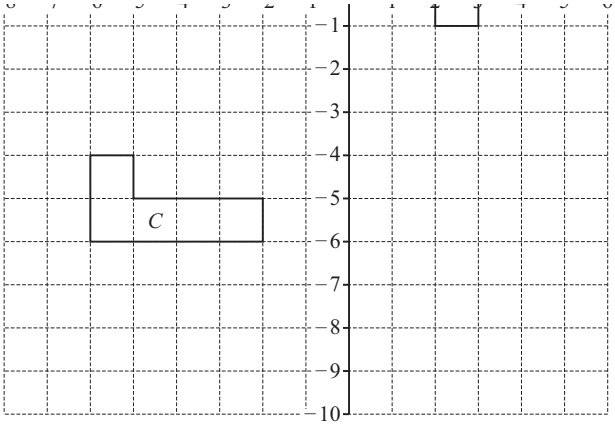
Question 4

0580/41 J25 ▪ Q4 ▪ 7 marks

4



Question 4



(a) Describe fully the **single** transformation that maps

Question 4

(i) shape A onto shape B

Question 4

(ii) shape A onto shape C.

Question 4

(b) On the grid, draw the image of shape A after a reflection in the line $x = -2$. [2]

Solution 4

(a)(i)

Mark scheme

- Translation
- 8

Solution 4

(a)(ii)

Mark scheme

- Rotation
- 90° [anticlockwise] [centre] (0, 0)
- 3 B1 for each

Solution 4

(b)

Mark scheme

- Image drawn at
- (0, 5) (0, 6) (2, 6) (2, 2) (1, 2) (1, 5)
- 2 B1 for reflection in $x = k$
- If 0 scored, SC1 for reflection in $y = -2$