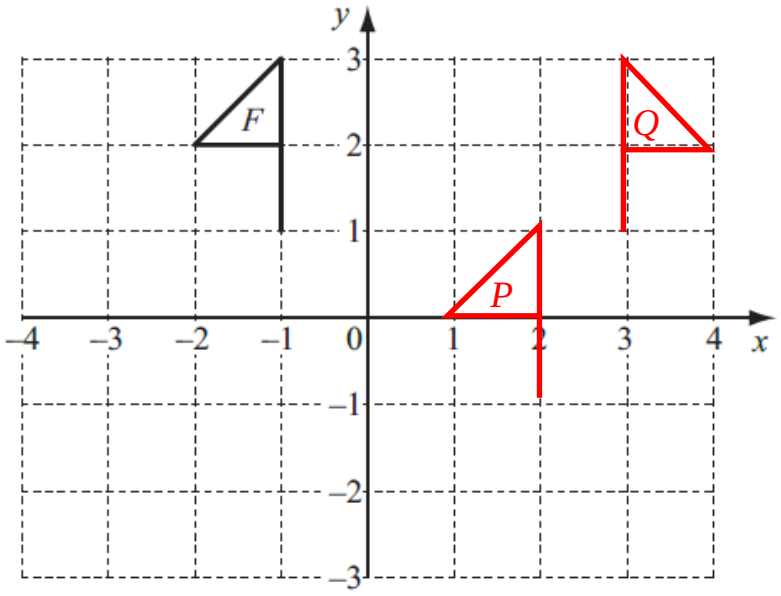
6.4 – Transformations

Student name: Answers Score: _____

1.



The diagram shows a flag F.

(a) Translate flag F by $\begin{pmatrix} 3 \\ -2 \end{pmatrix}$. Label the image P. [2]

(b) Reflect flag F in the line $x = 1$. Label the image Q. [2]

2.

A P N F H

From the list above, write down the letter which has

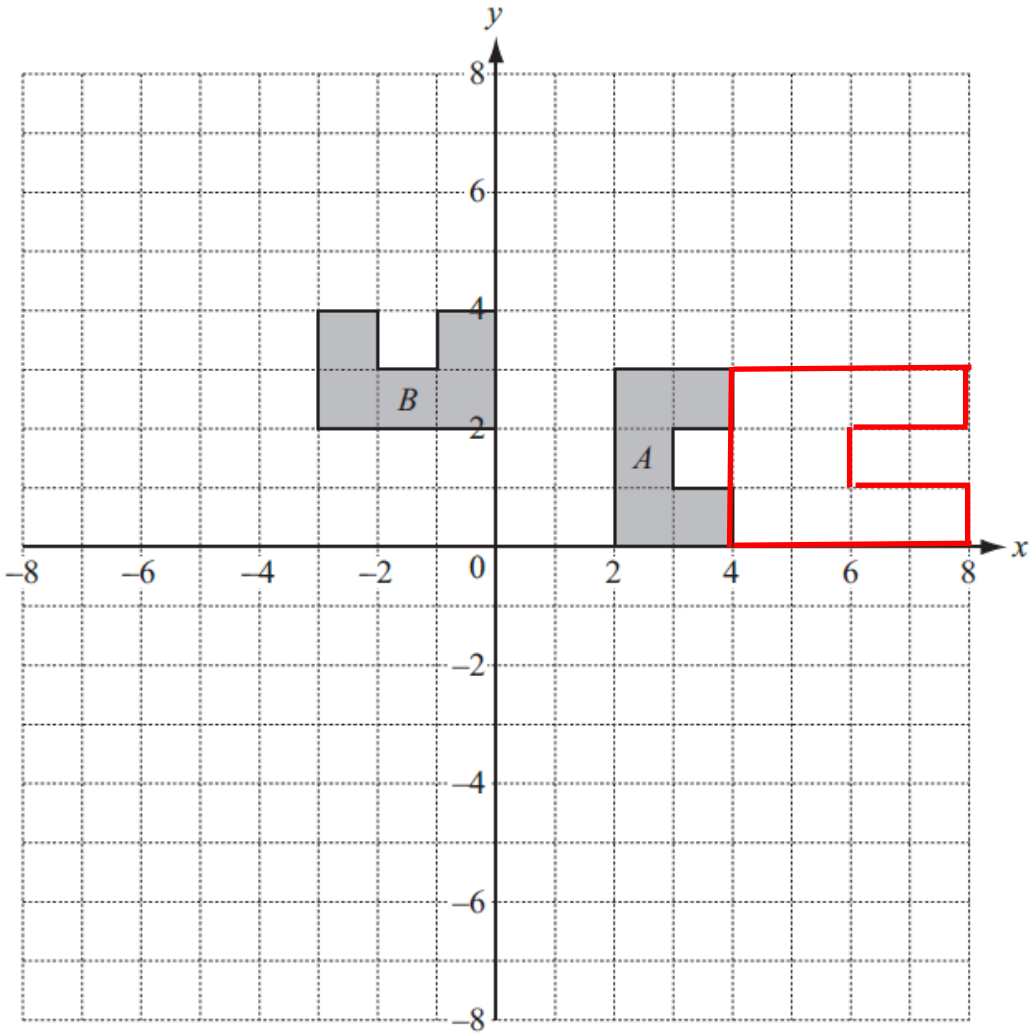
line symmetry only, ... A .....

line symmetry and rotational symmetry, ... H .....

rotational symmetry only. ..... N .....

[2]

3.



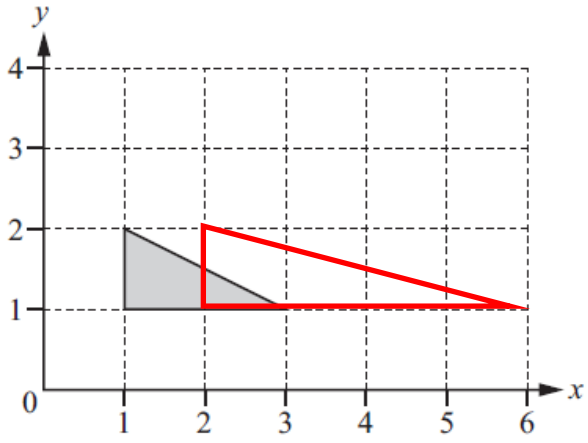
(a) Describe fully the **single** transformation which maps shape *A* onto shape *B*.

Rotation, centre (0, 0), 90°, anticlockwise

[3]

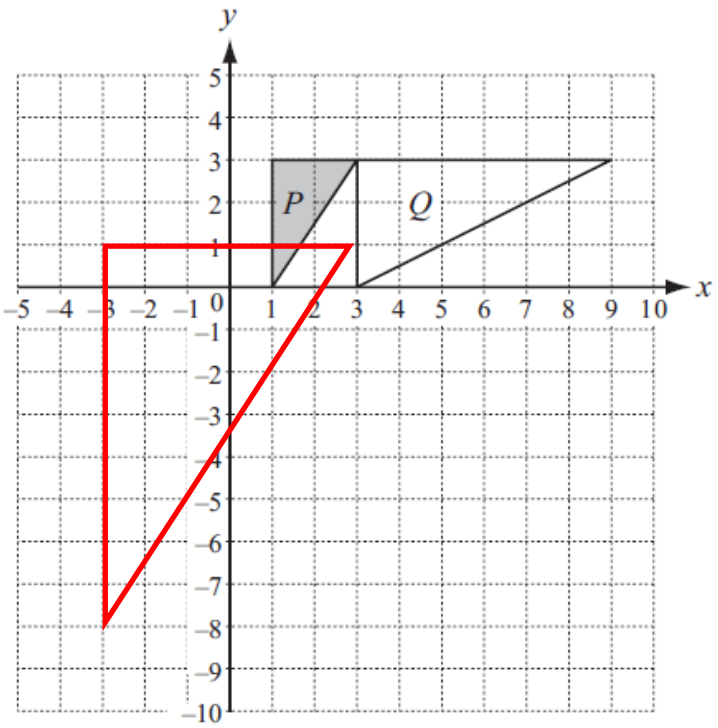
(b) Draw the image of shape *A* after a stretch, with *y*-axis invariant and scale factor 2. [2]

4.



Draw the stretch of the shaded triangle with the *y*-axis invariant and factor 2. [2]

5.



(a) Enlarge shape P using centre (3, 4) and scale factor 3. [2]

(b) Describe fully the **single** transformation that maps shape P onto shape Q.

Stretch, Invariant y-axis, stretch factor 3

[3]

6. Triangle B is the image of triangle A after a reflection.
Triangle C is the image of triangle B after an enlargement, scale factor 2.
Triangle D is the image of triangle C after a rotation.
Triangle E is the image of triangle D after a stretch, factor 3.

Complete this table.
Write C if the triangles are congruent.
Write S if the triangles are similar.
Write N if the triangles are neither congruent nor similar.

Triangles	C, S or N
A and B	C
A and C	S
B and D	S
D and E	N

[3]

7. Describe **fully** the inverse of each transformation.

(a) Translation by $\begin{pmatrix} -2 \\ 5 \end{pmatrix}$.

Translation $\begin{pmatrix} 2 \\ -5 \end{pmatrix}$

..... [2]

(b) Enlargement with centre (2, 3) and scale factor 2.

Enlargement or reduction, and centre (2, 3)

.....

Scale factor $\frac{1}{2}$

..... [2]