Transformations II - Rotations

1) Draw x and y axes numbered from -12 to 12 on each axis. Plot the shape T with vertices at (4,3), (7,3), (7,6) and (5,6).
(a) Draw and label the following shapes:
P: the image of T after a rotation 90° clockwise round the point (4,-2)
Q: the image of P after a rotation 90° anticlockwise around the origin

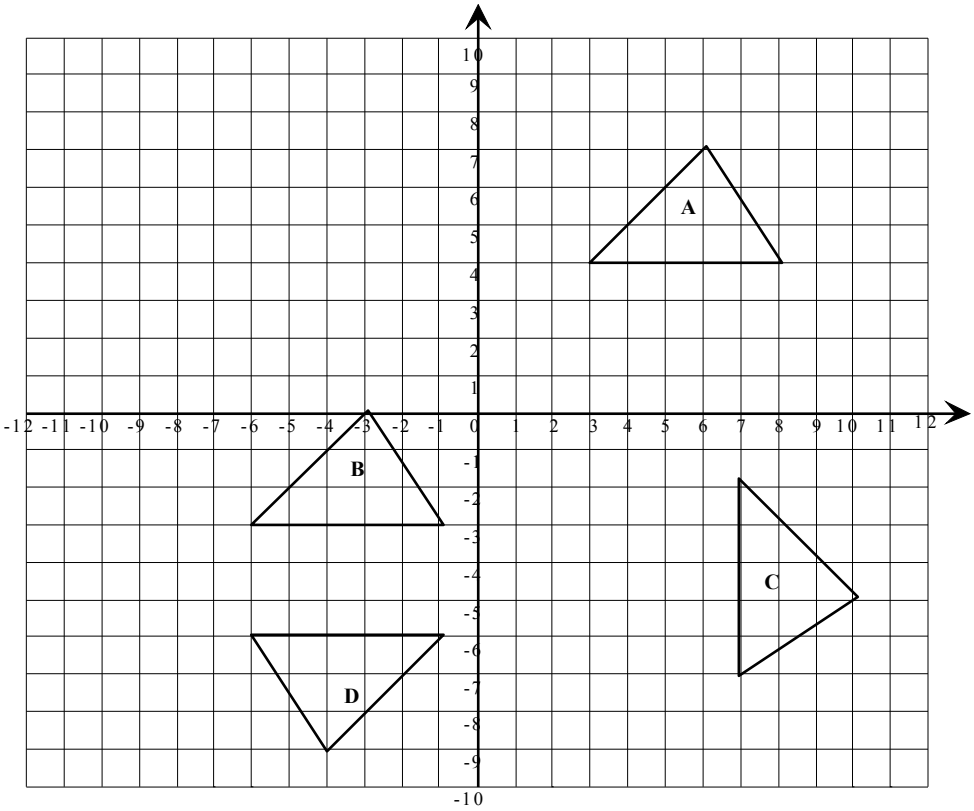
(b) What TRANSLATION would move T onto Q ?

2) Draw x and y axes and number them from -12 to 12 on each axis. Plot the triangle T with vertices at (4,2), (4,6) and (6,5).

(a) Draw and label the following shapes:
P: the image of T after a rotation of 90° anticlockwise about the origin.
Q: the image of P after a rotation of 90° clockwise about the point (3,-2)

R: the image of T after a rotation of 90° clockwise about the point (3,-2)
S: the image of R after a rotation of 90° anticlockwise about the origin.

(b) Does the ORDER in which we carry out two rotations make any difference to the end result achieved? (ie is S in the same place as Q?)
(c) What single transformation would map T onto Q?
(d) What single transformation would map T onto S?



3) In the diagram above, what transformation would map:

(a) A onto D (b) A onto C (c) C onto A (d) C onto D (e) C onto B (f) A onto B (g) B onto D

4) Draw x and y axes numbered from -12 to 12 on each axis. Plot the triangle T with vertices at (2,1), (8,1), and (4,5).

(a) Draw and label the following triangles:
F: the image of T after a rotation of 180° clockwise about the point (4,2)
G: the image of F after a rotation of 90° clockwise about the point (4,-2)

P: the image of T after a rotation of 90° clockwise about the point (4,-2)
Q: the image of P after a rotation of 180° clockwise about the point (4,2)

(b) What single transformation would move T onto G?
(c) What single transformation would move T onto Q?