Name - _ _ _ _ _ _ _ _ Start time - _ _ : _ _ End time - _ _ : _ _

Solve the following

1. Triangle ABC has its corners at A(2, 1), B(6, 4) and C(6, 1).
   a) Draw triangle ABC on a pair of axes, where both the x- and y-axes are labelled from −6 to 6.
   b) Reflect ABC in the y-axis. Label the image A_1, B_1, C_1.
   c) Reflect the image A_1, B_1, C_1. in the x-axis. Label the image A_2, B_2, C_2.
   d) Find a single rotation that transforms triangle ABC onto the image A_2, B_2, C_2.

2. Draw triangle PQR with corners at P(2, 3), Q(4, 3) and R(4, 4) on a pair of axes with x- and y-values from -6 to 6.
   a) (i) Rotate PQR 90° clockwise about the point (1, 3). Label the image P_1, Q_1, R_1.
   (ii) Write down any points of PQR that are invariant under this transformation.
   b) (i) Translate P,Q,R, by $\begin{pmatrix}1\\1\end{pmatrix}$ .Label the new image PQR.
   (ii) Write down any points of P_1, Q_1, R_1 that are invariant under this transformation.
   c) (i) Describe a single transformation that maps triangle PQR onto the image P_2, Q_2, R_2.
   (ii) Write down any points of PQR that are invariant under this transformation.

3. Shape WXYZ has its corners at W(−6, 2), X(−3, 3), Y(-2, 6) and Z(-2, 2). Draw WXYZ on a pair of axes, where both the x- and y-axes are labelled from -6 to 6.