KS3 – Transformations

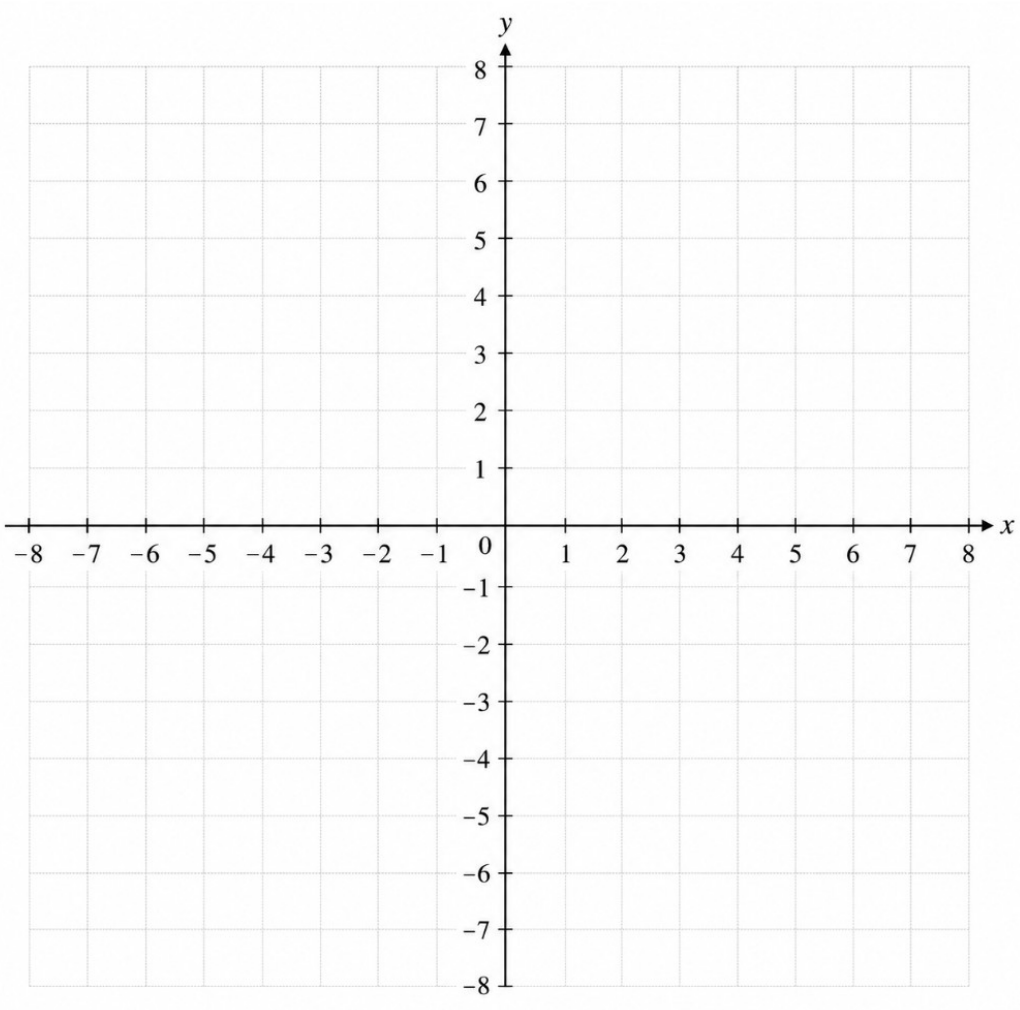
Section A – Reflection

Q1 (5 marks)

On the grid below, plot and join A(1, 1), B(4, 1), C(4, 3) and D(1, 3) to form rectangle ABCD.

a) Reflect ABCD in the y-axis. Label the image $A_1B_1C_1D_1$.

b) Write the coordinates of A_1, B_1, C_1 and D_1.



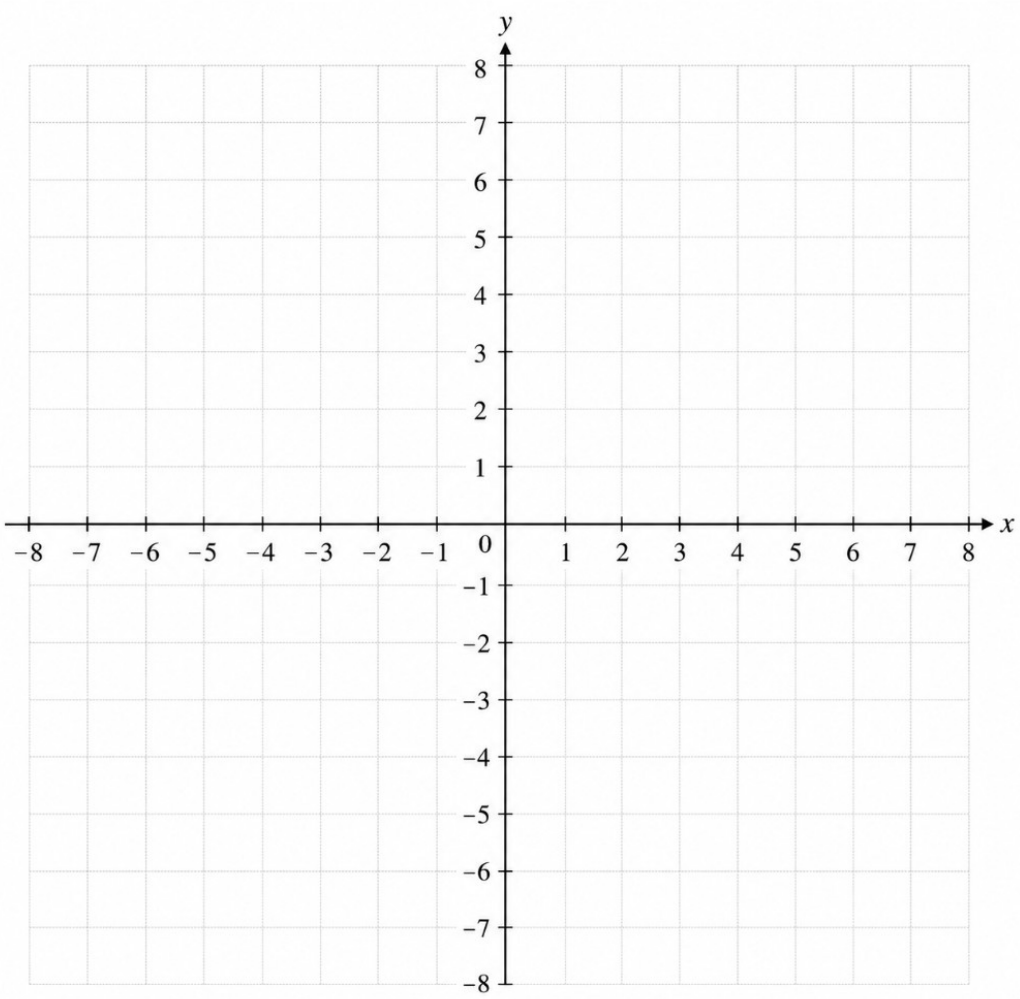
Q2 (6 marks)

On the grid below, plot triangle PQR with P(-6, 1), Q(-2, 1) and R(-4, 4).

a) Reflect PQR in the line x = -1. Label the image $P_1Q_1R_1$.

b) From the ORIGINAL triangle PQR, reflect it in the line y = -1. Label this image $P_2Q_2R_2$.

c) Write the coordinates of R_1 and R_2.

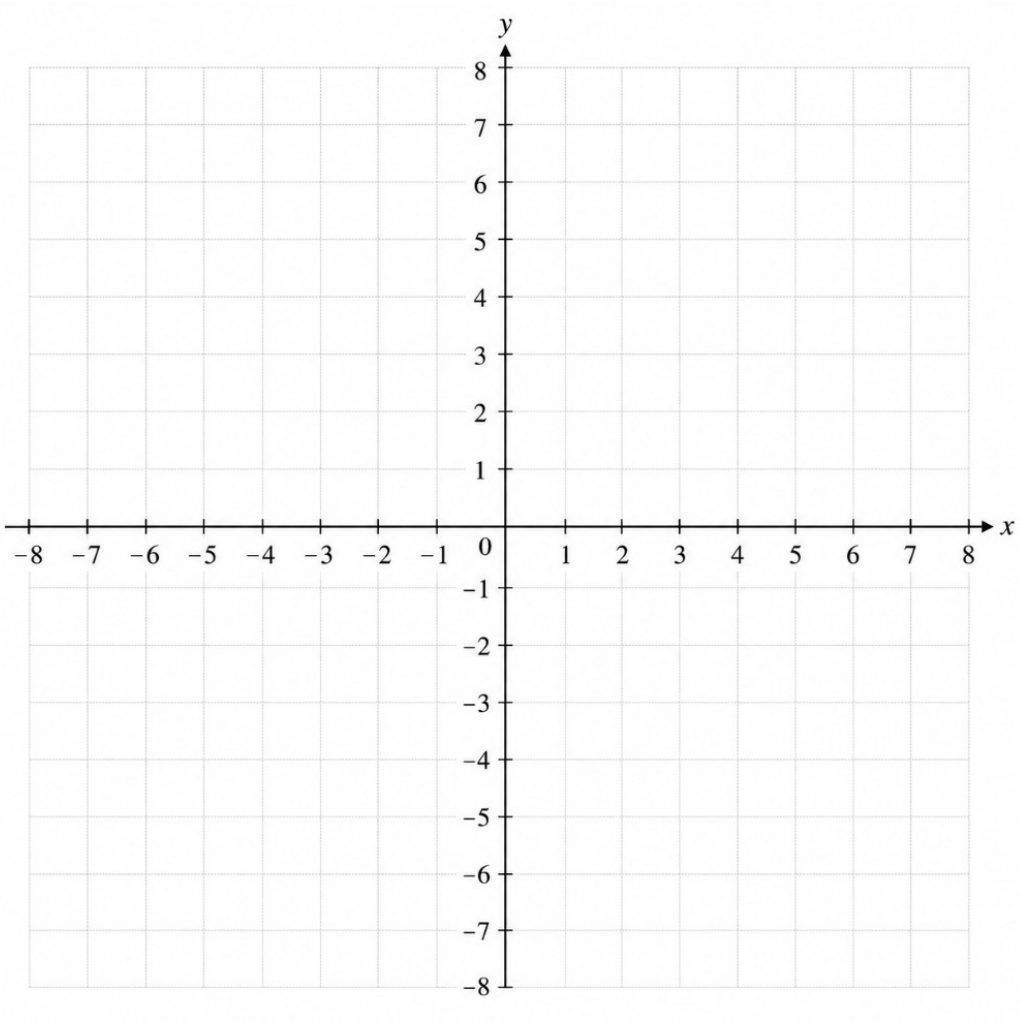


Q3 (4 marks)

Plot triangle ABC with A(2, 2), B(5, 2) and C(3, 5).

Reflect the triangle in the line y = x and label the image $A_1B_1C_1$.

Write the coordinates of A_1, B_1 and C_1.



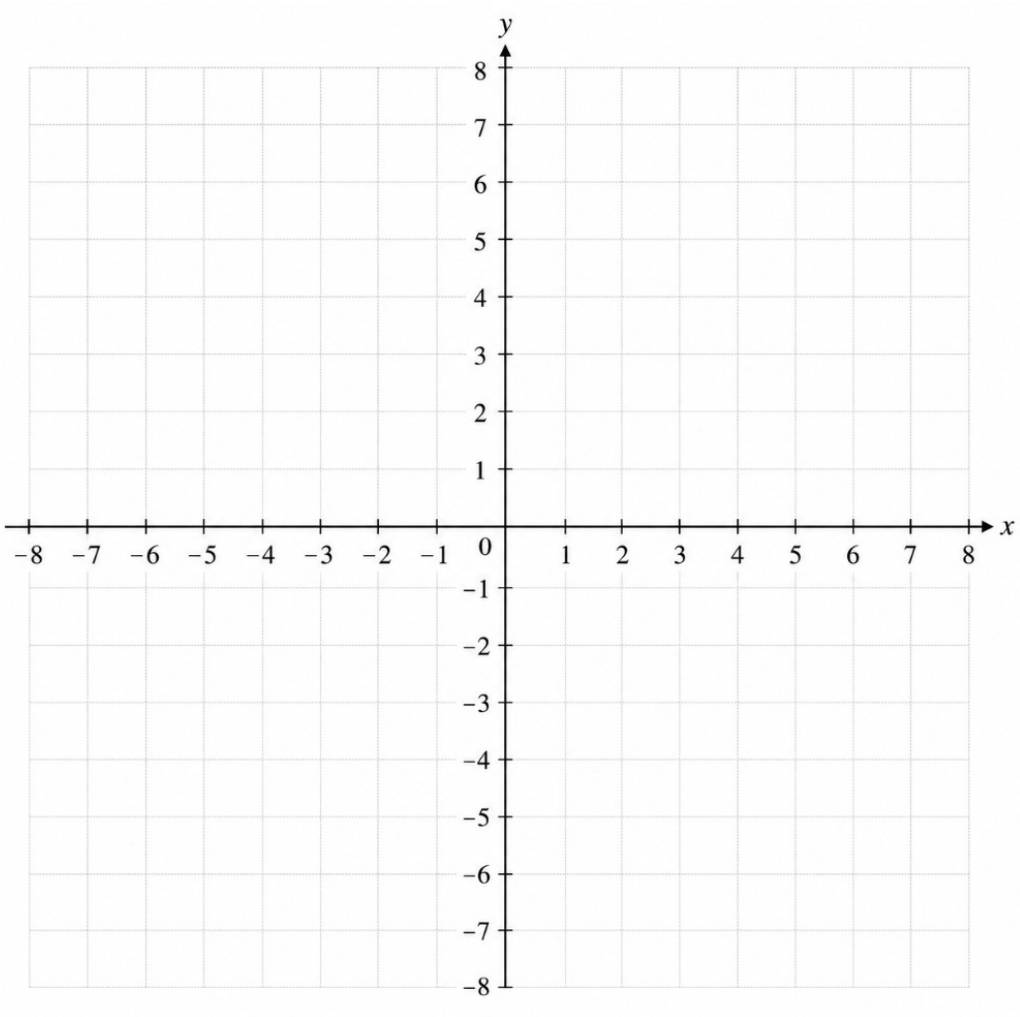
Section B – Rotation

Q4 (5 marks)

Plot triangle ABC with A(1, 2), B(4, 2) and C(2, 4).

Rotate ABC 90° anticlockwise about the origin. Label the image $A_1B_1C_1$.

Write the coordinates of A_1, B_1 and C_1.



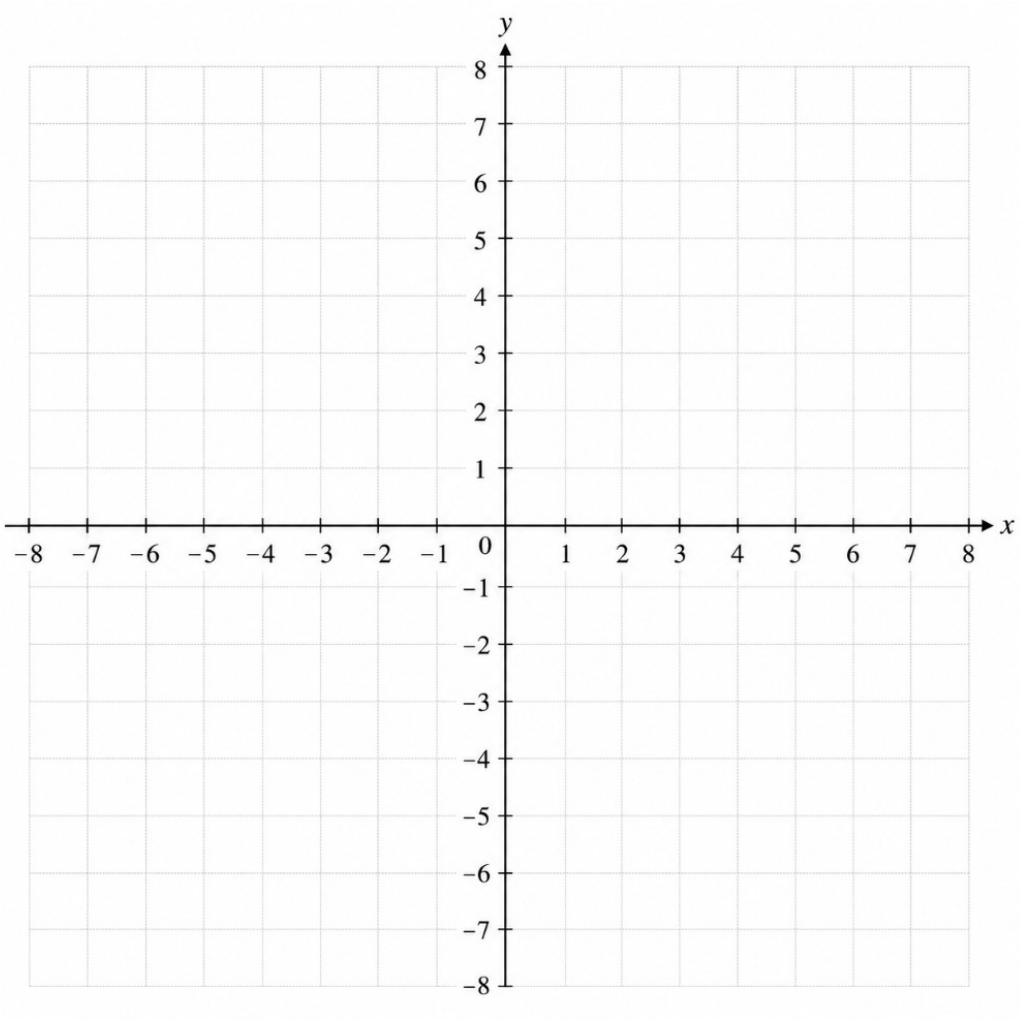
Q5 (6 marks)

Plot rectangle EFGH with E(-5, 1), F(-2, 1), G(-2, 3) and H(-5, 3).

a) Rotate EFGH 180° about the origin. Label the image $E_1F_1G_1H_1$.

b) From the ORIGINAL rectangle, rotate EFGH 90° clockwise about the origin. Label this image $E_2F_2G_2H_2$.

c) Write the coordinates of E_1 and E_2.

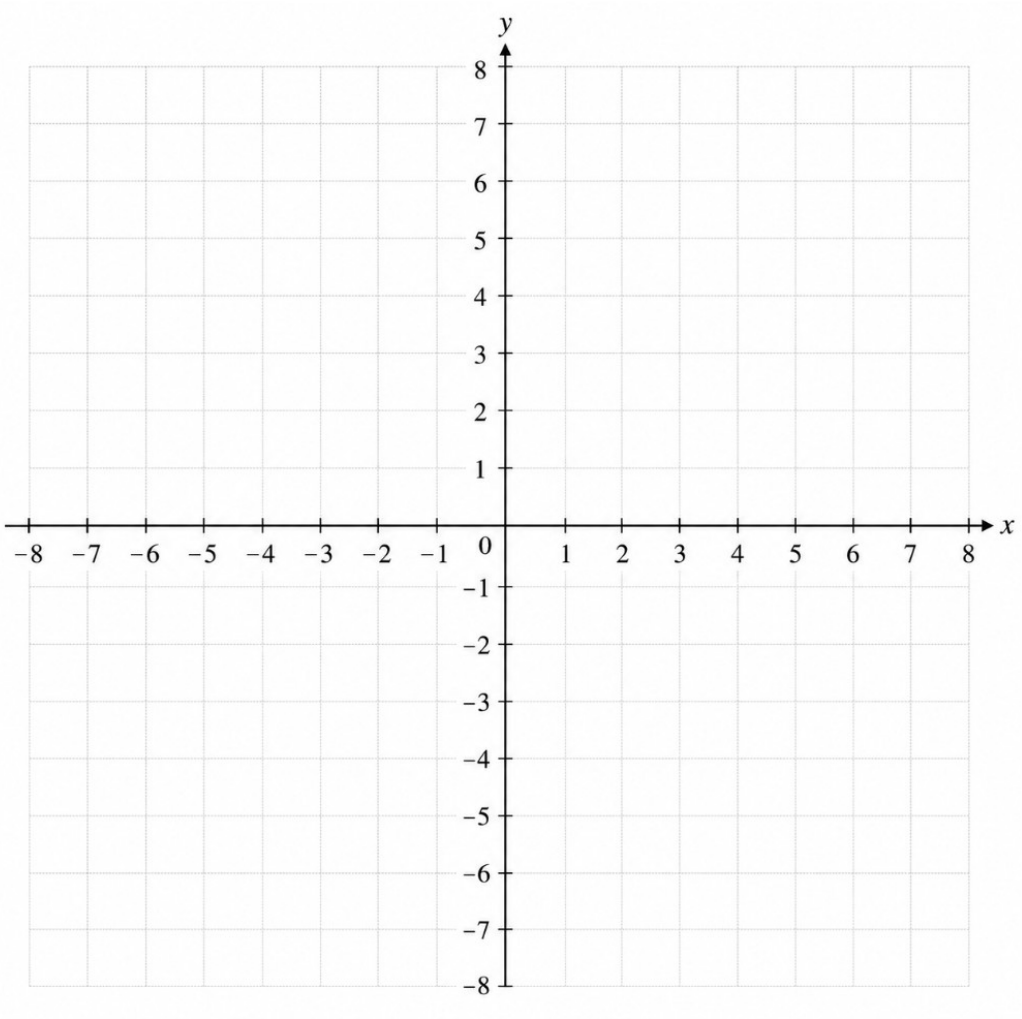


Q6 (5 marks)

Plot triangle JKL with J(2, 1), K(5, 1) and L(4, 3).

Rotate JKL 90° anticlockwise about the centre (1, 0). Label the image $J_1K_1L_1$.

Write the coordinates of J_1, K_1 and L_1.



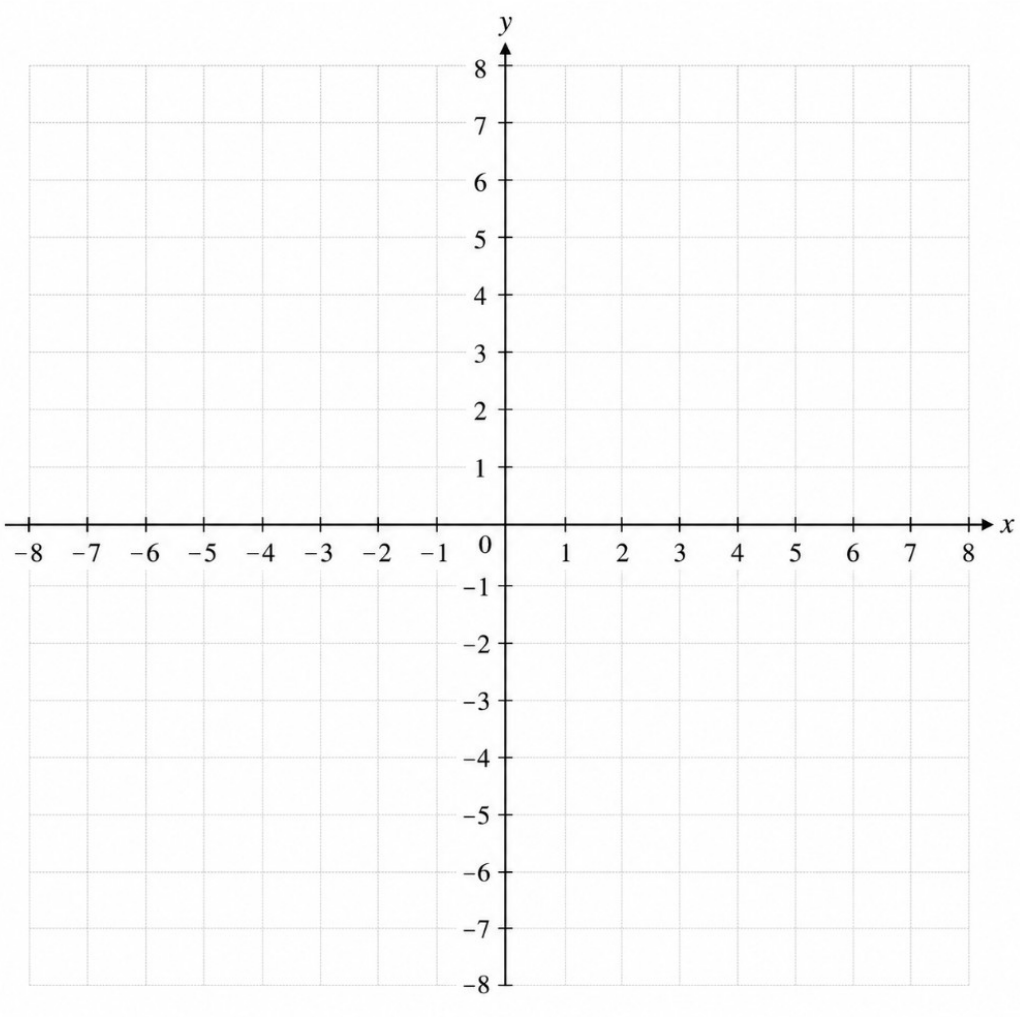
Section C – Translation

Q7 (5 marks)

Plot triangle ABC with A(-6, -4), B(-3, -4) and C(-5, -1).

a) Translate ABC 7 units right and 2 units up. Label the image $A_1B_1C_1$.

b) Write the coordinates of A_1, B_1 and C_1.



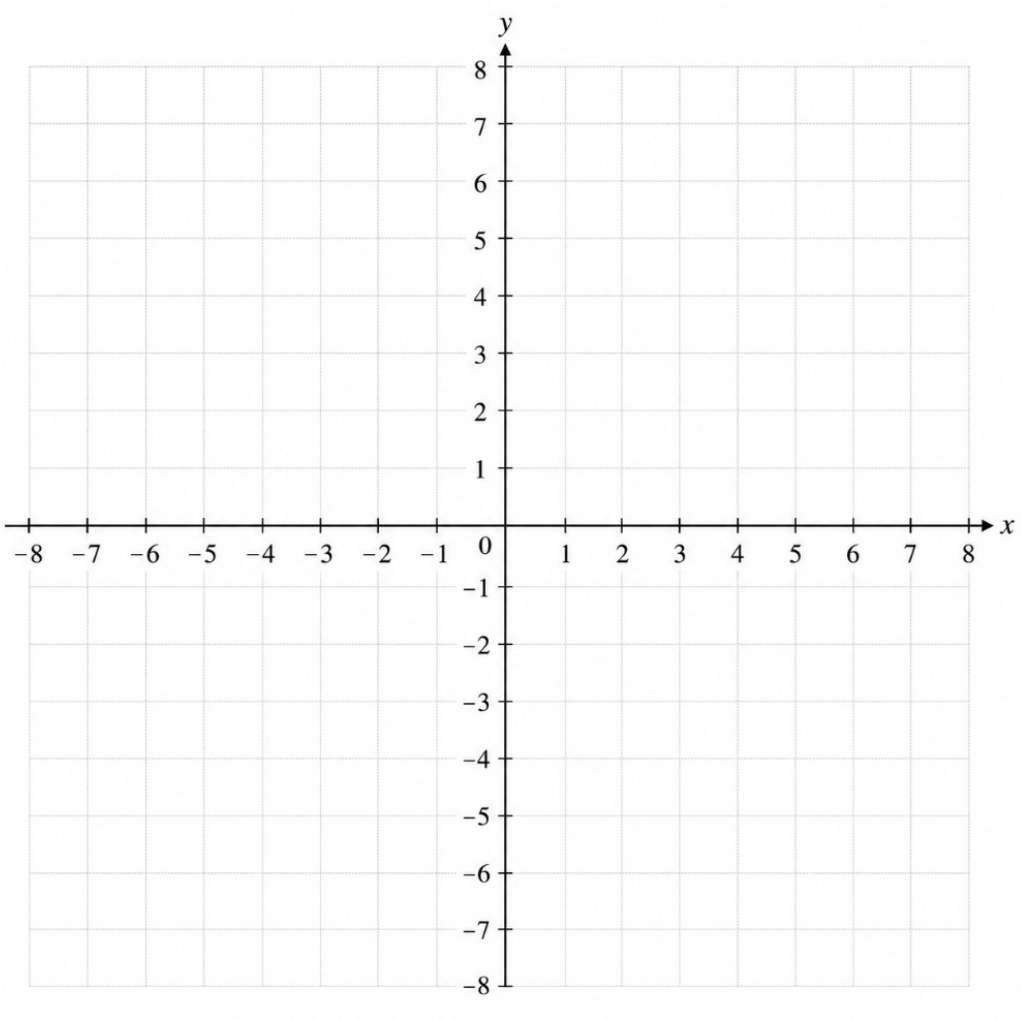
Q8 (6 marks)

Plot rectangle PQRS with P(1, 2), Q(4, 2), R(4, 4) and S(1, 4).

a) Translate PQRS 3 units left and 5 units down. Label the image $P_1Q_1R_1S_1$.

b) From the ORIGINAL rectangle, translate PQRS 2 units right and 3 units down. Label this image $P_2Q_2R_2S_2$.

c) Write the coordinates of R_1 and R_2.

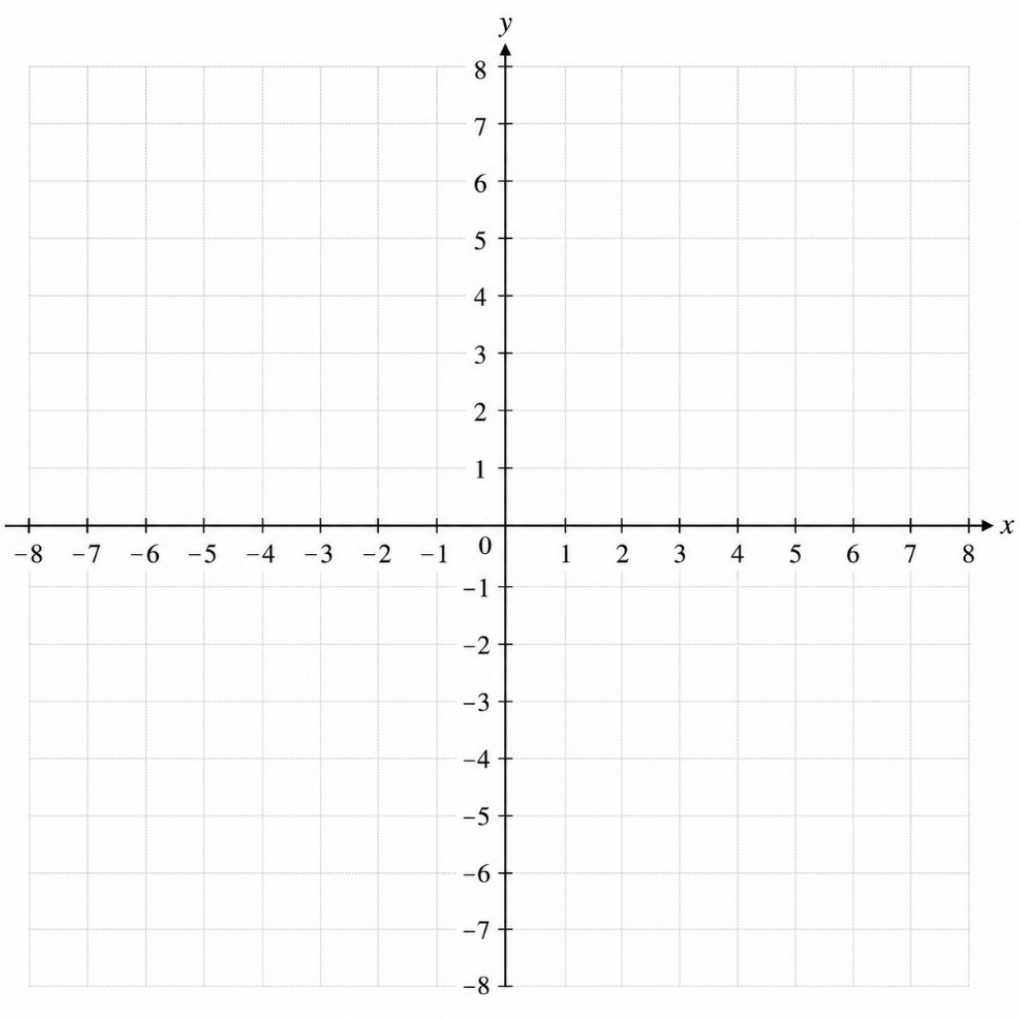


Q9 (4 marks)

Plot triangle XYZ with X(-2, 1), Y(1, 1) and Z(0, 4).

Translate XYZ by the vector (4, -6). Label the image $X_1Y_1Z_1$.

Write the coordinates of X_1, Y_1 and Z_1.



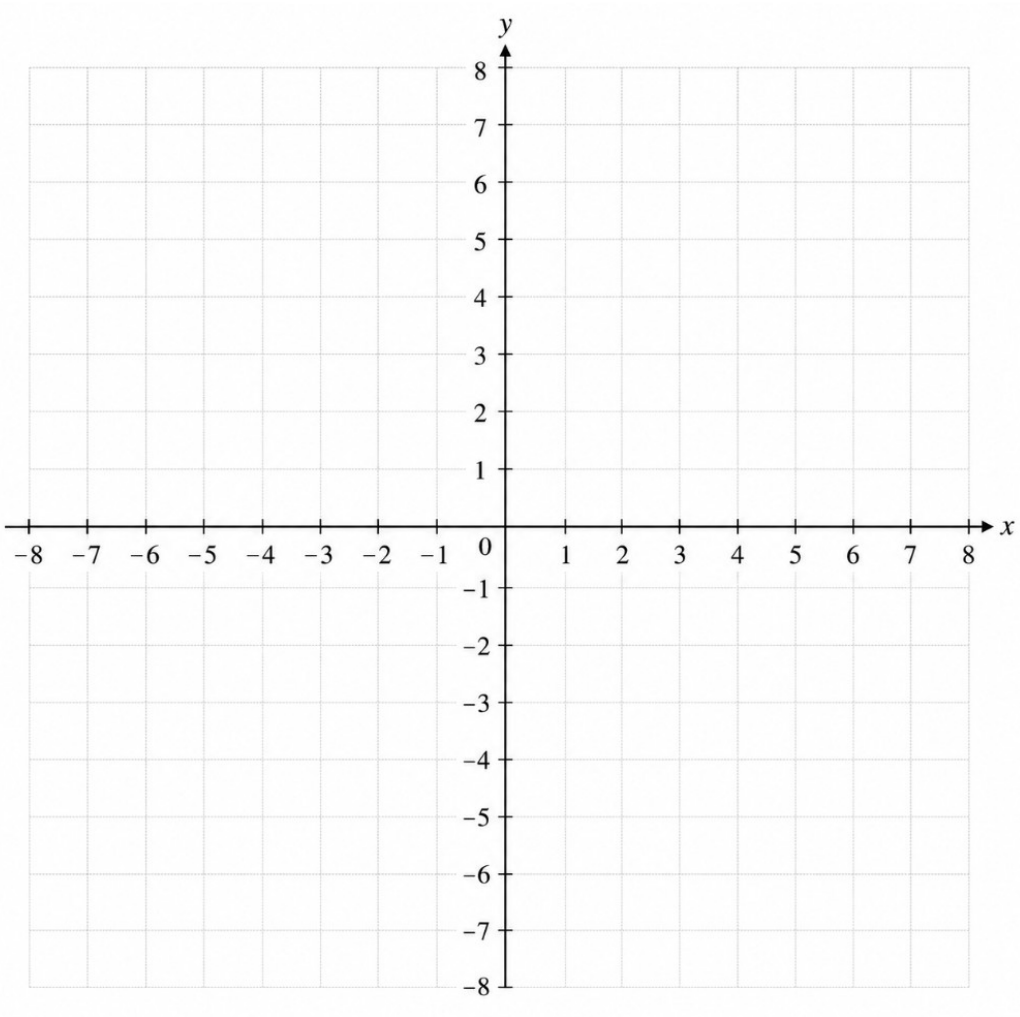
Section D – Enlargement

Q10 (5 marks)

Plot triangle ABC with A(1, 1), B(3, 1) and C(1, 3).

Enlarge ABC by scale factor 2 with centre of enlargement (0, 0). Label the image $A_1B_1C_1$.

Write the coordinates of A_1, B_1 and C_1.

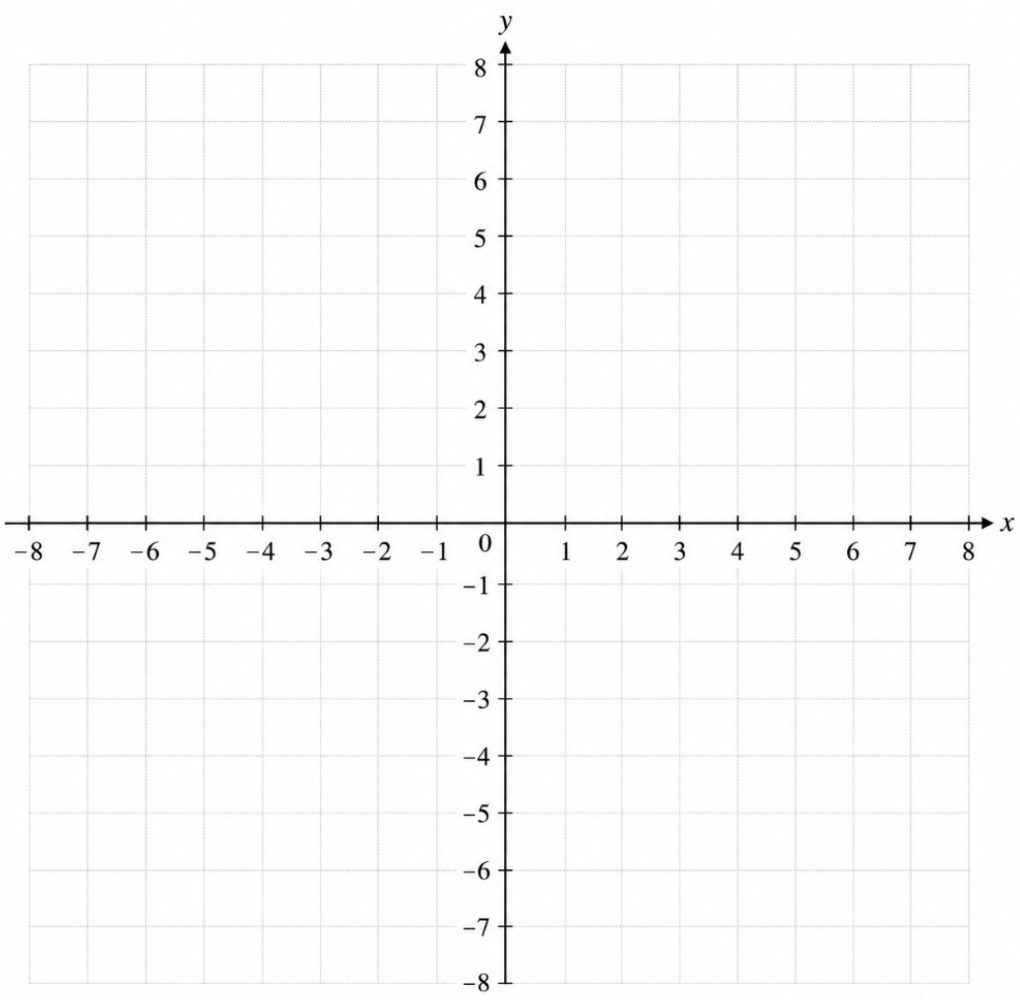


Q11 (5 marks)

Plot rectangle EFGH with E(-3, -2), F(-1, -2), G(-1, -1) and H(-3, -1).

Enlarge EFGH by scale factor 2 with centre of enlargement (-4, -3). Label the image $E_1F_1G_1H_1$.

Write the coordinates of E_1, F_1, G_1 and H_1.



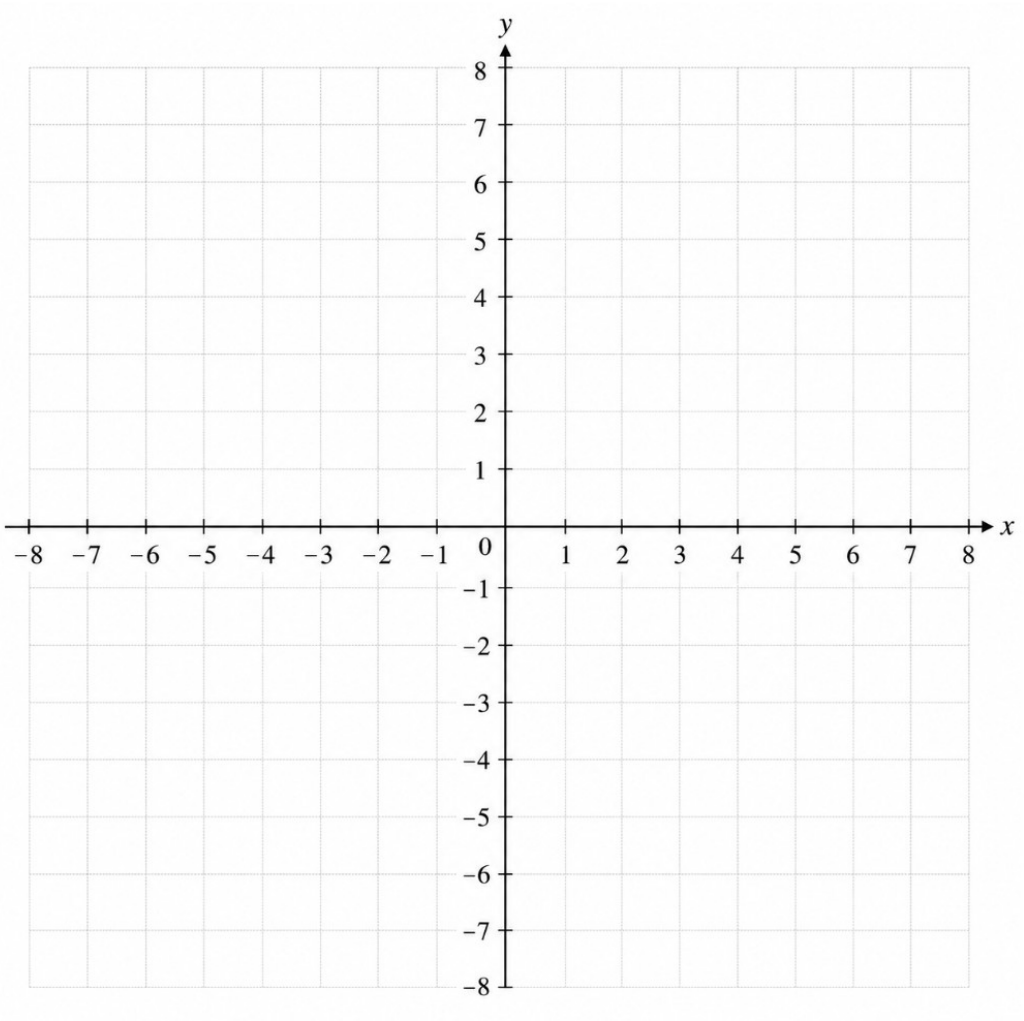
Challenge

Q12 (4 marks)

Plot triangle PQR with P(2, 2), Q(6, 2) and R(2, 6).

Enlarge PQR by scale factor 1/2 with centre of enlargement (0, 0). Label the image $P_1Q_1R_1$.

Write the coordinates of P_1, Q_1 and R_1.



Total: ____ / 60

Percentage: _____%