

Equation of a line

1. Triangle ABC has vertices A(-1,6), B(-3,-2) and C(5,2).
 - (a) Find the equation of the median from C in this triangle.
 - (b) Find the equation of the perpendicular bisector of BC.
 - (c) Find the point of intersection of these two lines.

2. A triangle PQR has vertices P(7,0), Q(-3,-2) and R(-1,8).
The median RE and the altitude QD intersect at J.
 - (a) Find the equations of RE and QD.
 - (b) Find the coordinates of J.

3. A rhombus PQRS has diagonals PR and QS.
PR has equation $y = 2x - 2$. Q has coordinates (-2,4).
 - (a) Find the equation of the diagonal QS.
 - (b) Find the coordinates of T, the intersection of PR and QS.
 - (c) R is the point (5,8). Write down the coordinates of P.

4. Triangle ABC has vertices A(2,2), B(12,2) and C(8,6).
 - (a) **Write down** the equation of the perpendicular bisector of AB.
 - (b) Find the equation of the perpendicular bisector of AC.
 - (c) Find the point of intersection of these two lines.

5. A triangle has vertices A(-3,-3), B(-1,1) and C(7,-3).
 - (a) Show that triangle ABC is right-angled at B.
 - (b) The medians AD and BE intersect at M. Find the equations of AD and BE.
 - (c) Hence find the coordinates of M.

6. Triangle PQR has vertices P(-6,4), Q(-2,12) and R(-2,2).
 - (a) **Write down** the equation of the perpendicular bisector of QR.
 - (b) Find the equation of the perpendicular bisector of PR.
 - (c) Find the point of intersection of these two lines.

7. In triangle ABC, A is (-2,-3), B is (2,-2) and C is (-4,4).
 - (a) Find the equation of AD the altitude from A.
 - (b) Find the equation of BP, the median through B
 - (c) Find the coordinates of the point of intersection of these two lines.