Level 2 Coordinate Geometry proofs
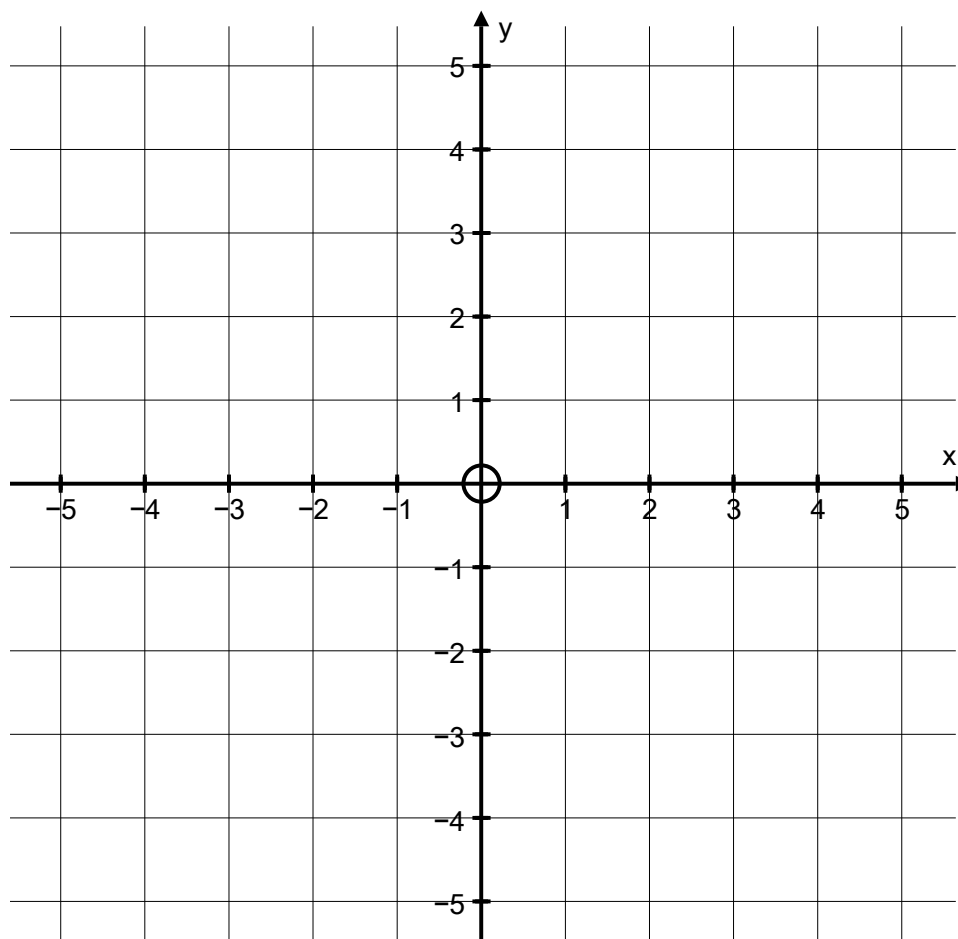
1.

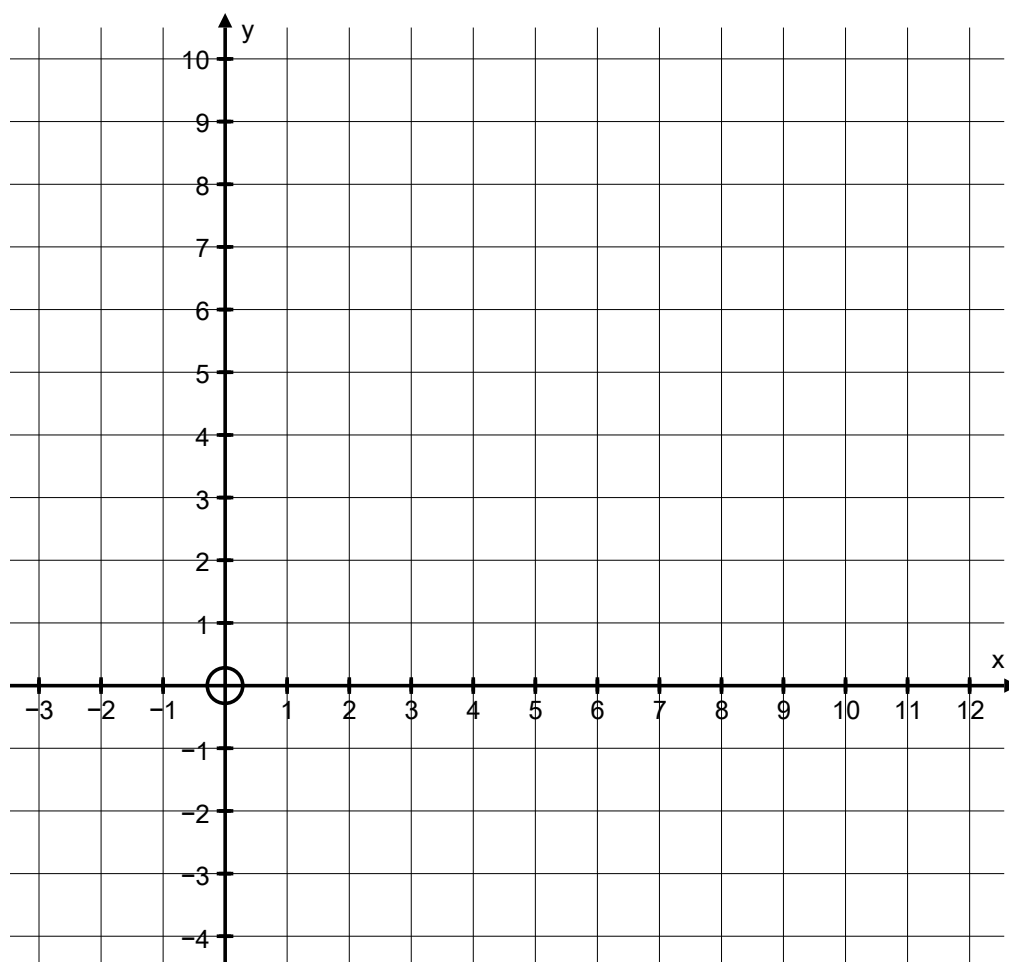   a) Draw triangle ABC where A is (–4,4), B is (–2, –2), C is (2,2)

  b) Determine, with clear reasons to back up your conclusion, whether the triangle ABC is scalene, isosceles or equilateral. (Do this in your books).

  c) Find M, the mid point of AB.

  d) Find N, the mid point of AC.

  e) A MEDIATOR is the perpendicular bisector of a side. Draw all three mediators of this triangle.

  f) Find the circumcentre G, the point of intersection of the mediators.

g) Find the EQUATIONS of the mediators of BC and AC and AB.

h) Calculate the LENGTHS of the mediators of BC and AC and AB.

i) Calculate, by any method, the AREA of triangle ABC but be sure to explain what you are doing.

2.

a) **Prove** that the following four points form a **rectangle**
$$A(2, -3), B(11, 3), C(7, 9), D(-2, 3)$$

(b) Find the area of the rectangle **exactly**: (no decimal approximations!)