AS Maths Review One

1	Show 3 ways (excluding sketching/plotting) of finding the vertex of $y = x^2 - 3x - 10$
2	Solve $2x^4 - 7x^2 - 4 = 0$
3	Find the equation of the perpendicular bisector of (2, 1) and (6, -1) and express it in the form of $ax^2 + bx + c = 0$ where $a, b, c \in \mathbb{Z}, a > 0$
4	The distance between (*a*, 4) and (3, 1) is $\sqrt{13}$ units. Find both values of *a*.
5	The vertices of quadrilateral ABCD are A (2, 4), B (-1, 5), C (–3, 4) and D (–2, 2). (a) Calculate the gradient of line CD. (b) Show that line AD is perpendicular to line CD. (c) Find the equation of line CD. Lines AB and CD intersect at point E. (d) Find the coordinates of E.