

**8** In this question you must show detailed reasoning.

**(a)** Find the centre and radius of the circle with equation  $x^2 + y^2 - 2x + 4y - 20 = 0$ . **[4]**

**(b)** Find the points of intersection of the circle with the line  $x + 3y - 10 = 0$ . **[5]**