

7 In this question you must show detailed reasoning.

The points A $(-1, 4)$ and B $(7, -2)$ are at opposite ends of a diameter of a circle.

(a) Find the equation of the circle. **[4]**

(b) Find the coordinates of the points of intersection of the circle and the line $y = 2x + 5$. **[3]**

(c) Q is the point of intersection with the larger y -coordinate.

Calculate the area of the triangle ABQ. **[3]**