



The diagram shows the circle with equation $x^2 + y^2 - 6x + 9y + 19 = 0$ and centre C .

(a) Find the following.

- The coordinates of C .
- The exact radius of the circle.

[3]

The tangent to the circle at D meets the x -axis at the point A $(\frac{55}{4}, 0)$ and the y -axis at the point B $(0, -11)$.

(b) Determine the area of triangle OBD .

[6]