6 A circle has centre C (10, 4). The *x*-axis is a tangent to the circle, as shown in Fig. 6.
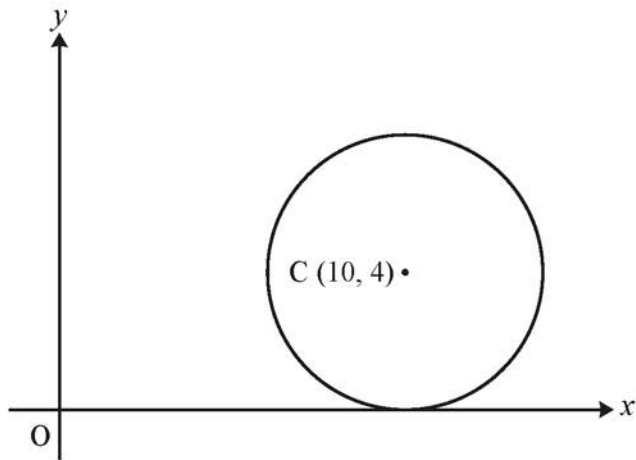

Fig. 6

(a) Find the equation of the circle. **[2]**

(b) Show that the line $y = x$ is not a tangent to the circle. **[4]**

(c) Write down the position vector of the midpoint of OC. **[1]**