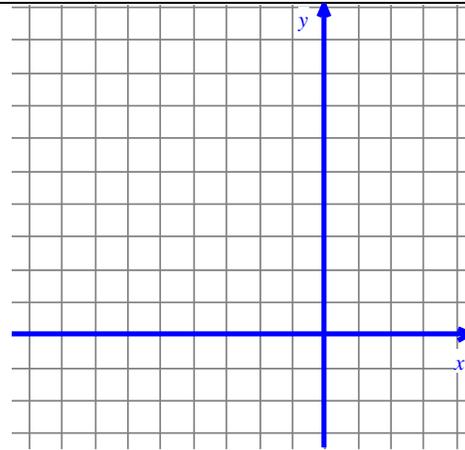
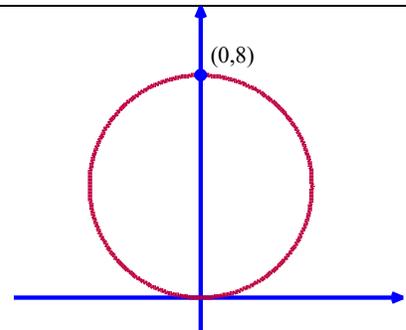


1) In the  $xy$ -plane, the graph of the equation  $(x+2)^2 + (y-4)^2 = 25$  is a circle. Point  $P$  is on the circle and has coordinates  $(2,7)$ . If  $\overline{PQ}$  is a diameter of the circle, what are the coordinates of point  $Q$ ?



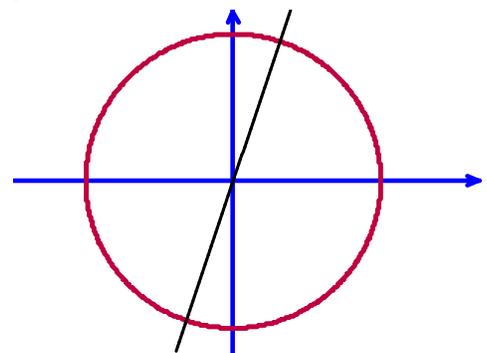
2) The equation  $x^2 + y^2 - 2x = 3$  is a circle in the  $xy$ -plane. What is the radius of the circle?

3) Find the equation of the circle shown.



4) Solve the system by substitution and label the solutions on the graph.

$$\begin{cases} x^2 + y^2 = 10 \\ y = 3x \end{cases}$$



5) Find the equation of the line tangent to the circle from (4) at the point  $(1,3)$