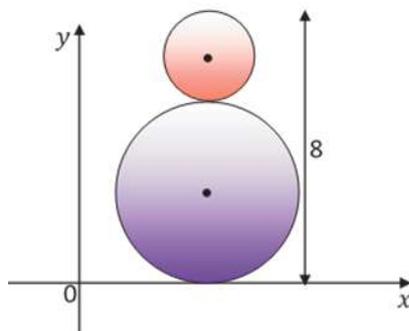


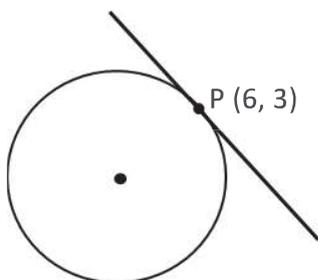
## Circles

1. The diagram shows two circles.  
 [G5] The equation of the larger circle is  $x^2 + y^2 - 8x - 6y + 16 = 0$ , and the centres are aligned parallel to the  $y$ -axis.



Find the equation of the smaller circle.

2. Point P (6, 3) lies on the circle  $x^2 + y^2 - 8x - 2y + 9 = 0$ .  
 [G6]



Find the equation of the tangent to the circle at P.

3. Find the coordinates of the points of intersection of the line  $y - x + 5 = 0$   
 [G7] and  $x^2 + y^2 - 2x + 4y - 15 = 0$ .

