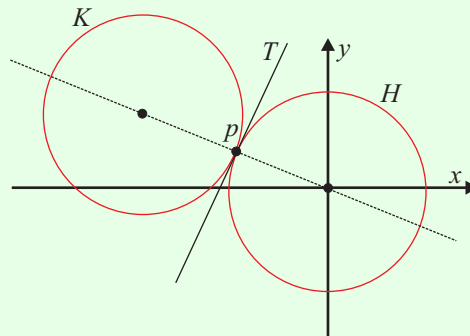


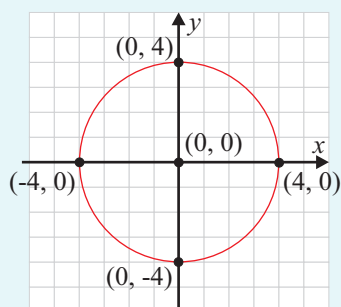
THE CIRCLE (Q 3, PAPER 2)

2008

- 3 (a) A circle has equation $x^2 + y^2 = 16$.
- Show the circle on a co-ordinate diagram.
 - Mark the four points at which the circle intersects the axes and label them with their co-ordinates.
- (b) The diagram shows two circles H and K , of equal radius. The circles touch at the point $p(-2, 1)$. The circle H has centre $(0, 0)$.
- Find the equation of H .
 - Find the equation of K .
 - T is a tangent to the circles at p . Find the equation of T .
- (c) The circle S has equation $(x - 3)^2 + (y + 2)^2 = 40$. S intersects the x -axis at the point a and at the point b .
- Find the co-ordinates of a and the co-ordinates of b .
 - Show that $|ab|$ is less than the diameter of S .
 - Find the equation of the circle with $[ab]$ as diameter.

**ANSWERS**

3 (a)



- (b) (i) $x^2 + y^2 = 5$ (ii) $(x + 4)^2 + (y - 2)^2 = 5$
 (iii) $2x - y + 5 = 0$
- (c) (i) $a(9, 0)$, $b(-3, 0)$ (iii) $(x - 3)^2 + y^2 = 36$