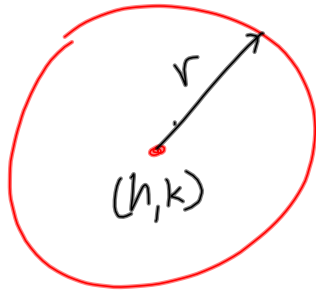
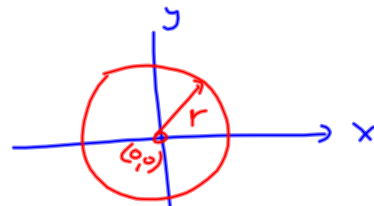


Circle :

$$(x-h)^2 + (y-k)^2 = r^2$$



If centre is $(0, 0)$



then: $x^2 + y^2 = r^2$

Centre : $(2, -3)$

Radius : 3

Equation ?

write formula

sub in centre and radius

tidy up.

$$(x-h)^2 + (y-k)^2 = r^2$$

$$(x-2)^2 + (y-(-3))^2 = 3^2$$

$$(x-2)^2 + (y+3)^2 = 9$$

$$x^2 + y^2 = 16$$

Centre: (0,0)

Radius: 4

$$(x-h)^2 + (y-k)^2 = r^2$$

$$(x-3)^2 + (y+2)^2 = 7$$

Centre: (+3, -2)

Radius: $\sqrt{7}$

Question 4

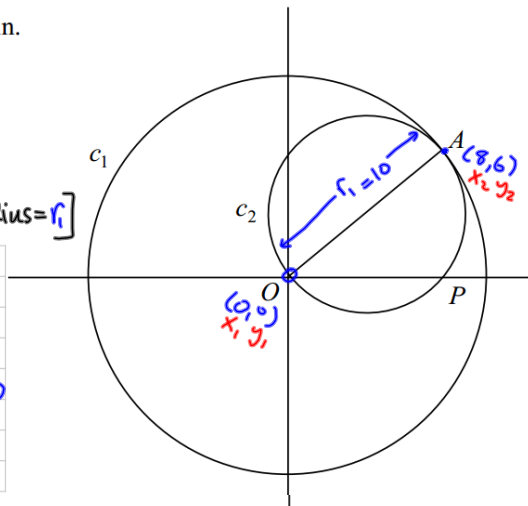
(25 marks)

The point A has co-ordinates (8, 6) and O is the origin.

The diagram shows two circles c_1 and c_2 .

c_1 has centre (0, 0) and radius $|OA|$.

c_2 has a diameter of [OA].



- (a) Find the equation of c_1 . [Centre = (0,0), radius = r_1]

$r_1 = |OA| = ?$
 $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
 $r_1 = \sqrt{(8-0)^2 + (6-0)^2} = \sqrt{8^2 + 6^2} = 10$
 $(x-h)^2 + (y-k)^2 = r^2$
 $x^2 + y^2 = 100$

- (b) Find the equation of c_2 .
