

Find circle centre  $(0,0)$  which has a radius of 5.

$$x^2 + y^2 = r^2 \quad r = 5$$

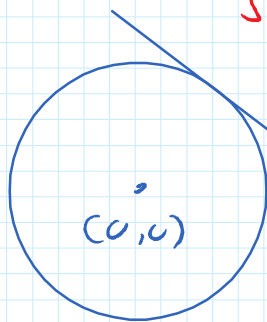
$$x^2 + y^2 = 25$$

Find circle centre  $(0,0)$  which contains  $(-1, 3)$

$$x^2 + y^2 = r^2 \quad (-1, 3)$$

$$x^2 + y^2 = 10$$

Find circle centre  $(0,0)$  which has  $x - 3y - 7 = 0$  as a tangent.



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

Radius = perp distance:

$$a = 1 \quad b = -3 \quad c = -7 \quad x_1 = 0 \quad y_1 = 0$$

$$\frac{|ax_1 + by_1 + c|}{\sqrt{a^2 + b^2}}$$

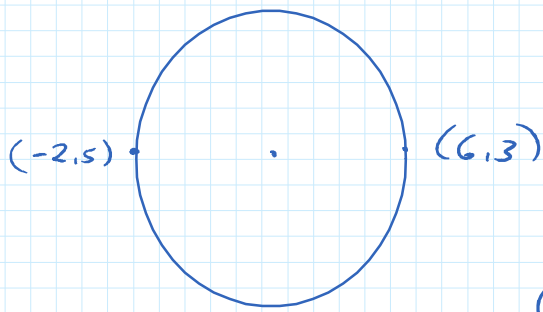
$$\frac{7}{\sqrt{10}}$$

$$\frac{7}{\sqrt{10}}$$

$$x^2 + y^2 = \frac{49}{10}$$

$$10x^2 + 10y^2 = 49$$

Find circle which has  $(-2, 5)$  and  $(6, 3)$  as end points of a diameter.



Centre = midpoint.

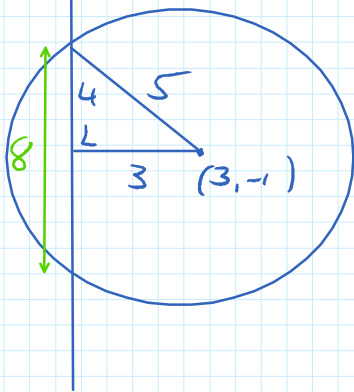
Radius = distance from  $(2, 4)$  to  $(6, 3)$

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = \sqrt{4^2 + (-1)^2} = \sqrt{17}$$

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

$$(x - 2)^2 + (y - 4)^2 = 17$$

Find circle centre  $(3, -1)$  which cuts a chord of length 8 units on the y-axis.



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

$$(x - 3)^2 + (y + 1)^2 = r^2$$

$$(x - 3)^2 + (y + 1)^2 = 25$$