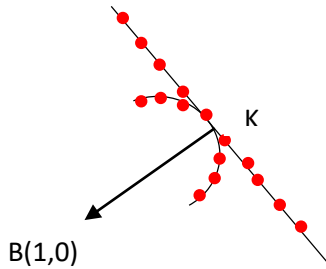


Circle

You have a equation of line

$$y = -2x + 7$$

We want to know if the line is tangent to the circle



R of the circle is $R = \sqrt{5}$

The equation of the circle

$$(x-1)^2 + y^2 = 5$$

$$1 \quad 2x + y - 7 = 0$$

$$2 \quad \sqrt{A^2 + B^2} = \sqrt{2^2 + 1^2} = \sqrt{5}$$

$$3 \quad \frac{2x+y-7}{\sqrt{5}} = 0 \quad \text{we have to use } B(1,0)$$

to find the distance

$$4 \quad \frac{2 \cdot 1 + 0 - 7}{\sqrt{5}} = \left| \frac{-5}{\sqrt{5}} \right| = \sqrt{5}$$

$$d = \sqrt{5}$$

$d = R \Rightarrow y = -2x + 7$ is tangent

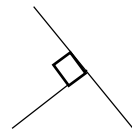
$$\frac{1}{2}(x-1) = -2x + 7$$

$$2.5x = 7.5$$

$$x = 3$$

$$y = 1$$

$$K(3,1)$$



$$a_1 = -2$$

$$a_2 = 1$$

$$B(1,0) \quad a = \frac{1}{2}$$

$$y = \frac{1}{2}(x-1)$$