

1: >> Formula

Angulo entre 2 rectas

$$\tan(\alpha) = \frac{m_2 - m_1}{1 + m_2 m_1}$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Sustitucion

$$m_1 = \frac{9 - 5}{3 - (-4)} = \frac{4}{7} \quad m_2 = \frac{1 - 4}{x - (-2)} = \frac{-3}{x + 2}$$

$$\tan(135) = \frac{\frac{-3}{x+2} - \frac{4}{7}}{1 + \frac{-3}{x+2} \left(\frac{4}{7}\right)} = -1$$

$$-1 \left(\frac{1 - 12}{7x + 14} \right) = \frac{-3}{x+2} - \frac{4}{7}$$

$$\frac{-1 + 12}{7x + 14} = \frac{-29 - 4x}{7x + 14} = -1 = \frac{-29 - 4x}{7x + 14} - \frac{12}{7x + 14}$$

$$= -1 = \frac{41 - 4x}{7x + 14} = -7x - 14 = 41 - 4x$$

$$= 41 - 14 = 7x + 4x = 27 = 3x$$

$$\frac{27}{3} = x = 9 \quad \text{absisa} = 9$$

((9, 1))

2)) Formula

$$\tan(x) = \frac{m_2 - m_1}{1 + m_2 m_1}$$

Sustitución

$$m_1 = 2\sqrt{3} \quad m_2 = x \quad x = 30^\circ$$

$$\tan(30^\circ) = \frac{x - 2\sqrt{3}}{1 + 2x\sqrt{3}} = \frac{\sqrt{3}}{3} = \frac{x - 2\sqrt{3}}{1 + 2x\sqrt{3}}$$

$$\sqrt{3} + 2x\sqrt{3} = 3x - 6\sqrt{3}$$

$$6\sqrt{3} + \sqrt{3} = x$$

$$7\sqrt{3} = x = m_2 = \underline{\underline{7\sqrt{3}}}$$

3)) Formula = $Ax + By + C = 0$

$$x \cos w + y \cos w - p = 0$$

Sustitución

$$w = \pi/6 = 30^\circ \quad p = 4$$

$$x \cos 30^\circ + y \sin 30^\circ - 4 = 0$$

$$(\sqrt{3}/2x + 1/2y - 4 = 0) \cdot 2$$

$$\underline{\underline{\sqrt{3}x + y - 4 = 0}}$$

$$4)) \quad x^2 + y^2 = 25 \quad x - 7y + 25 = 0$$

$$x = 7y - 25$$

$$(7y - 25)^2 + y^2 = 25$$

$$49y^2 - 350y + 6225 + y^2 = 25$$

$$50y^2 - 350y + 6225 - 25 = 0$$

$$50y^2 - 350y + 6200 = 0$$

$$(50y^2 - 350y + 600 = 0) \quad /50$$

$$5y^2 - 7y + 12 = 0$$

$$\text{Factorizamos} = (y - 4)(y - 3) = 0$$

Sust. valores de la ecu. de la recta

$$x - 7y + 25 = 0$$

$$x - 7y + 25 = 0$$

$$x - 7(4) + 25 = 0$$

$$x - 7(3) + 25 = 0$$

$$x - 28 + 25 = 0$$

$$x - 21 + 25 = 0$$

$$x - 3 = 0 \quad = x = 3$$

$$x + 4 = 0 \quad x = -4$$

$$2 \text{ puntos} = A(3, 4) \quad B(-4, 3)$$

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

$$d = \sqrt{(3 - 4)^2 + (-4 - 3)^2}$$

$$d = \sqrt{1 + 49}$$

$$d = \sqrt{50}$$

$$d = 5\sqrt{2}$$

distancia

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

$h=5$

$k=-3$

$r = \sqrt{19}$

$x^2 + y^2 + Dx + Ey + F = 0$

Sustituimos

$(x-5)^2 + (y+3)^2 = 19$

$x^2 - 10x + 25 + y^2 + 6y + 9 = 19$

~~$x^2 + y^2 - 10x + 6y + 25 + 9 = 19$~~

$x^2 + y^2 - 10x + 6y + 34 = 19$

$x^2 + y^2 - 10x + 6y + 34 - 19 = 0$

$x^2 + y^2 - 10x + 6y + 15 = 0$

Ecu. general de la circunferencia.