Remedial KD 3.3

1.) $a = -2$
$b = 1$
$c = -4$
$r = 3$

$x^2 + y^2 + 4x - 2y - 4 = 0$

$(x+2)^2 + (y-1)^2 = 4 + 4 + 1$

$(x+2)^2 + (y-1)^2 = 9$

maka: $d = \left| \frac{-2(1) + (1)1 - 4}{\sqrt{2}} \right|$

$= \left| \frac{-5}{\sqrt{2}} \right| = \frac{5\sqrt{2}}{2}$ //

2.) $L \equiv x^2 + y^2 - 4x + 6y = 0$, Titik potong lingkaran tersebut dengan sumbu y adalah

- Karena berpotongan di Sb -y, maka $x = 0$
- $0^2 + y^2 - 4(0) + 6y = 0$

  $y^2 + 6y = 0$

  $y_1 = -6 \quad y_2 = 0$

→ Titik Potong 1 $= (0, -6)$

" " 2 $= (0, 0)$

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3.) Dik : $L \equiv x^2 + y^2 - 2x - 4y - 3 = 0$
$g \equiv x + y + m = 0$
Dit : $m = ?$

Jawab : $x + y + m = 0$
$y = -x - m \ldots (1)$

Substitusi pers. (1) ke pers. lingkaran

$x^2 + (-x-m)^2 - 2x - 4(-x-m) - 3 = 0$
$x^2 + x^2 + 2mx - 2x + 4x + 4m - 3 + m^2 = 0$
$2x^2 + 2mx + 2x + m^2 + 4m - 3 = 0$
$2x^2 + (2m+2)x + (m^2 + 4m - 3) = 0$

$D = 0$
$b^2 - 4ac = 0$
$(2m-2)^2 - 4(2)(m^2 + 4m - 3)$
$4m^2 - 8m + 4 - 8m^2 - 32m + 24 = 0$
$-4m^2 - 40m + 28 = 0$
$-m^2 - 10m + 7 = 0$
$m^2 + 10m - 7 = 0$

$m_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
$= \frac{+10 \pm \sqrt{10^2 - 4(1)(-7)}}{2(1)}$
$= \frac{+10 \pm \sqrt{128}}{2} = \frac{2(5 \pm 4\sqrt{2})}{2}$

$m_1 = 5 + 4\sqrt{2}$ $m_2 = 5 - 4\sqrt{2}$