

Onderwerp C6 : Twee cirkels en twee lijnen

2021-1

3p

4/78

$$x^2 - 4x + y^2 - 6y = -8 \quad \text{en} \quad y = \frac{1}{2}x + 4\frac{1}{2}$$

substitueren van y geeft

$$x^2 - 4x + \left(\frac{1}{2}x + 4\frac{1}{2}\right)^2 - 6\left(\frac{1}{2}x + 4\frac{1}{2}\right) = -8$$

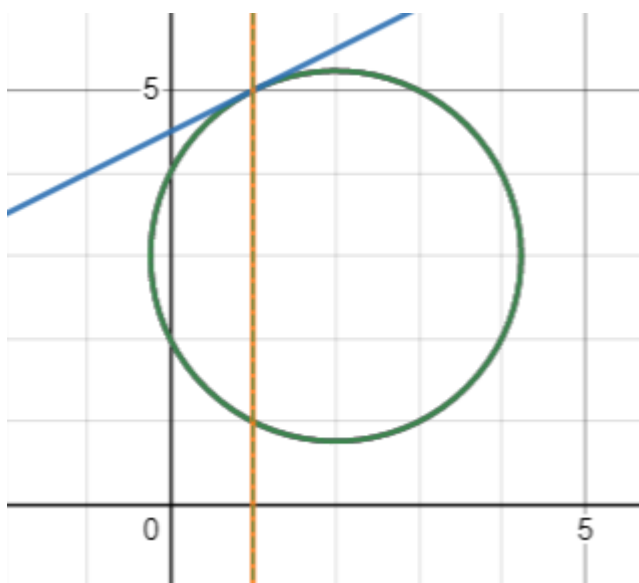
$$x^2 - 4x + \frac{1}{4}x^2 + \frac{9}{2}x + \frac{81}{4} - 3x - 27 + 8 = 0$$

$$\frac{5}{4}x^2 - \frac{5}{2}x + \frac{5}{4} = 0$$

$$D = b^2 - 4ac = \left(-\frac{5}{2}\right)^2 - 4 \cdot \frac{5}{4} \cdot \frac{5}{4} = 0$$

dus 1 oplossing, dus k raakt c_1

Zie afbeelding hierna



dia 65



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6p

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$$x^2 - 4x + y^2 - 6y = -8$$

$$(x-2)^2 - 4 + (y-3)^2 - 9 = -8$$

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

$$M(2,3)$$

$$rc_l \cdot rc_k = -1 \rightarrow rc_l = \frac{-1}{\frac{1}{2}} = -2$$

$$\text{lijn } l: y = -2x + b \text{ gaat door } M(2,3)$$

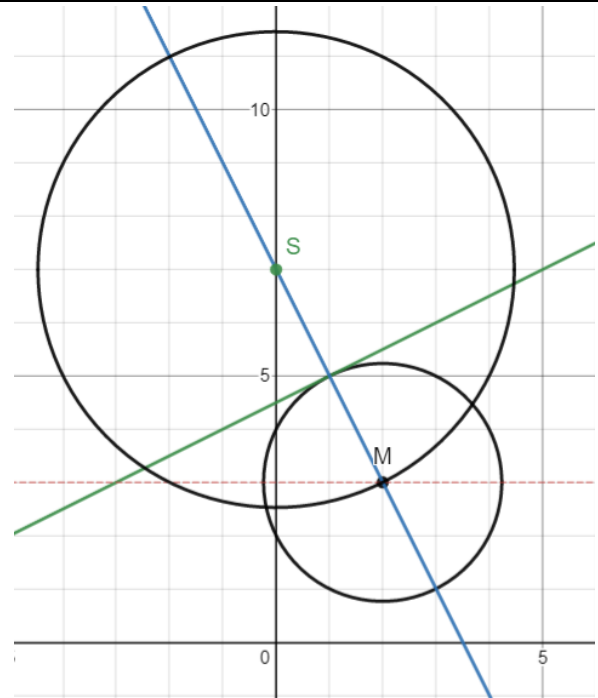
$$3 = -2 \cdot 2 + b \rightarrow b = 7$$

$$\text{lijn } l: y = -2x + 7$$

$$\text{snijpunt } y - \text{as}: S(0,7)$$

$$\text{cirkel } c_2: r^2 = 2^2 + (7-3)^2 = 20$$

$$\text{vergelijking } c_2: x^2 + (y-7)^2 = 20$$



dia 66

dia 68



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