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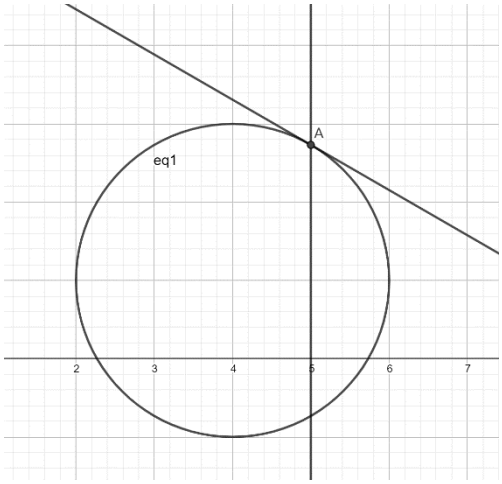
Opgave 234

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



Finde punkt A

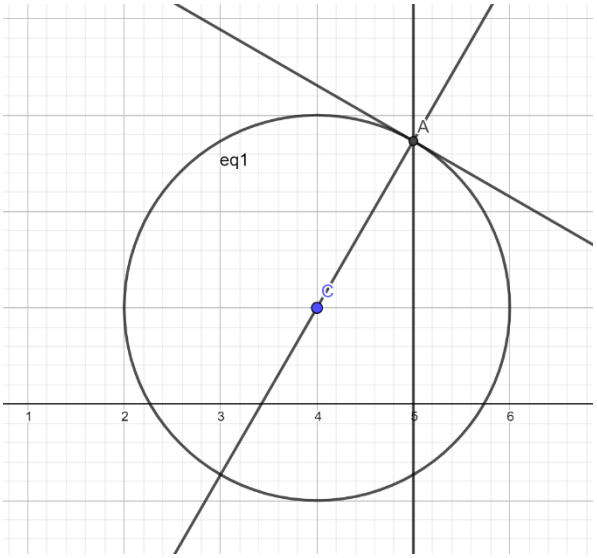
$$A(5, ?)$$

$$(5-4)^2 + (y-1)^2 = 2^2$$
$$1 + y^2 - 2y + 1 = 4$$
$$y^2 - 2y + 1 + 1 - 4 = 0$$
$$y^2 - 2y - 2 = 0$$

$$a = 1$$
$$b = -2$$
$$c = -2$$

$$y = \frac{-b + \sqrt{b^2 - 4ac}}{2a}$$
$$y = \frac{-(-2) + \sqrt{(-2)^2 - 4 \cdot 1 \cdot (-2)}}{2 \cdot 1}$$
$$y = \sqrt{3} + 1$$
$$y = 2{,}732051$$

$$A(5, 2.7)$$



Find hældningen af en linje på cirklens radius

$$C(4,1)$$

$$a = \frac{y_2 - y_1}{x_2 - x_1}$$
$$a_1 = \frac{1 - 2.7}{4 - 5}$$
$$a_1 = 1{,}7$$

Nu skal vi finde hældningnen for den tangenten

$$a_1 \cdot a_2 = -1$$
$$a_2 = \frac{-1}{a_1}$$
$$a_2 = \frac{-1}{1.7}$$
$$a_2 = -0{,}5882353$$

Nu skal vi finde der hvor den skærer y aksen

$$y = ax + b$$
$$b = y - ax \quad Isoler\ b$$
$$b = 2.7 - (-0.59) \cdot 5$$
$$b = 5{,}65$$

Formel for tangent

$$y = -0.59x + 5.65$$