



Show that the line with equation $y = 3x - 5$ is a tangent to the circle with equation $x^2 + y^2 + 2x - 4y - 5 = 0$ and find the coordinates of the point of contact.

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Answer:

Substitute the equation of the line into the equation of the circle and then either solve to find only one value of x or show that the discriminant $b^2 - 4ac = 0$. Point of contact: $(2, 1)$.