2 Solve the equation $x^{\frac{1}{3}} + 1 = \frac{6}{x^{\frac{1}{3}}}$. [4]

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3 A circle with centre C has the equation $x^2 + y^2 - 10x - 4y + 24 = 0$.

(a) Show that the line $y = 2x - 3$ is a tangent to this circle. [3]

(b) Given that this tangent touches the circle at the point P, find the coordinates of P. [2]

(c) Find the equation of the circle which has its centre at P and passes through the origin. [3]