

Finding Tangents and Normals

(a) Find the equation of the tangent to the curve $y = x^2 + 2x - 3$ at the point $(1, 0)$.

(b) Find the equation of the tangent to the curve $y = x^2 + 4x - 5$ at the point $(-1, -7)$.

(c) Find the equation of the tangent to the curve $y = x^3 + x$ at the point $(2, 10)$.

(a) Find the equation of the normal to the curve $y = x^2 - 4$ at the point $(1, -3)$.

(b) Find the equation of the normal to the curve $y = x^2 - 5x - 6$ at the point $(3, -12)$.

(c) Find the equation of the normal to the curve $y = 2x^3 - 3x + 1$ at the point $(1, 0)$.

(a) Find the equation of the tangent to the curve $y = x^2 + \frac{1}{x}$ at the point where $x = 1$.

(b) Find the equation of the normal to the curve $y = x(x + 2)(x - 1)$ at the point where $x = -2$.

(a) Find the equation of the tangent to the curve $y = 3x - x^2$ at the point $x = 2$.

(b) The tangent crosses the x -axis and y -axis at A and B respectively. Find the area of the triangle AOB.

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