

NCEA Level 3 Calculus (Differentiation)

6. Tangent and Normal Lines (Homework)

Reading

Go and watch...

<https://www.youtube.com/watch?v=6sNeE-mMYB8>

Questions

1. Write a definition for the normal line to a curve f at a point (x_0, y_0) .
2. Find the best linear approximation to the curve $y = \sqrt{\cos(x + \pi)} + \sin x - e^{2(\tan x)^2}$ at the point $(\pi, 0)$.
3. Find a function such that the normal line to the function at $(1, 0)$ has the equation $y = 3x - 3$.
4. Find a linear approximation to the curve $y = \sqrt[3]{1 + 3x}$ around $x = 0$, and determine an approximate value for $\sqrt[3]{1.03}$.