FIND THE EQUATION OF THE TANGENT

Example

Determine the equation of the tangent to $f(x) = 2x^3 - 6x$ at x = 2.

$\boldsymbol{f'(x) = 6x^2 - 6}$

$\boldsymbol{f'(2) = 6(2)^2 - 6 = 18}$

$\boldsymbol{\therefore y = 18x + c}$

$\boldsymbol{f(x) = 2x^3 - 6x}$

$\boldsymbol{f(2) = 2(2)^3 - 6(2) = 4}$

$\boldsymbol{Point: (2; 4)}$

$\therefore y = 18x + c$

$Subst: (2; 4)$

$4 = 18(2) + c$

$c = -32$

$\boldsymbol{Equation\ of\ tangent:}$

$\boldsymbol{y = 18x - 32}$