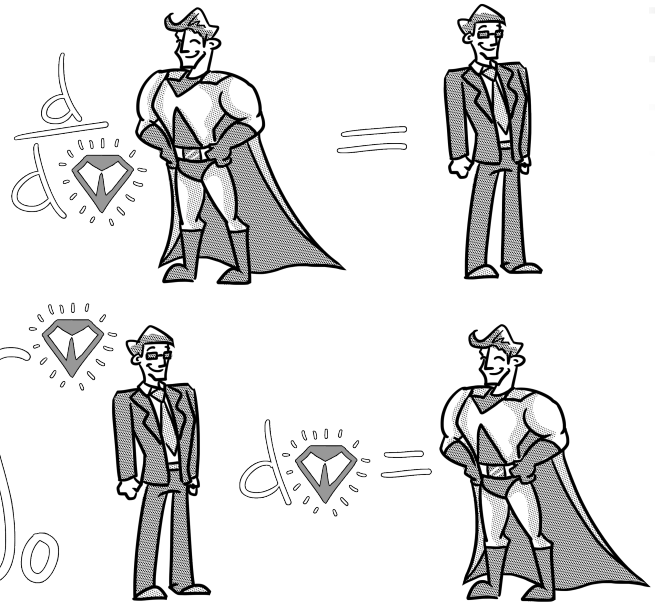
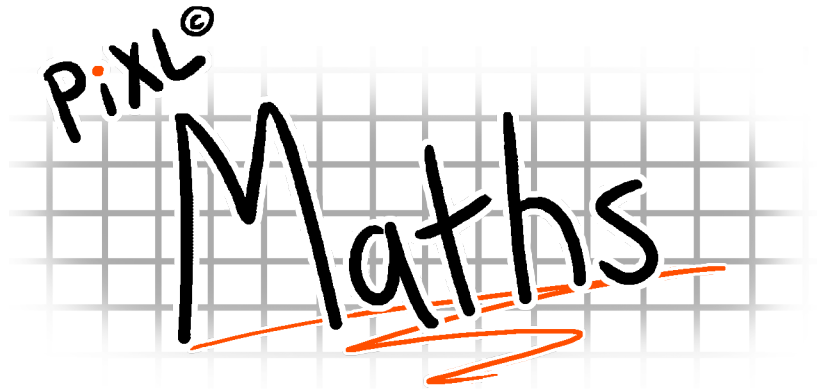
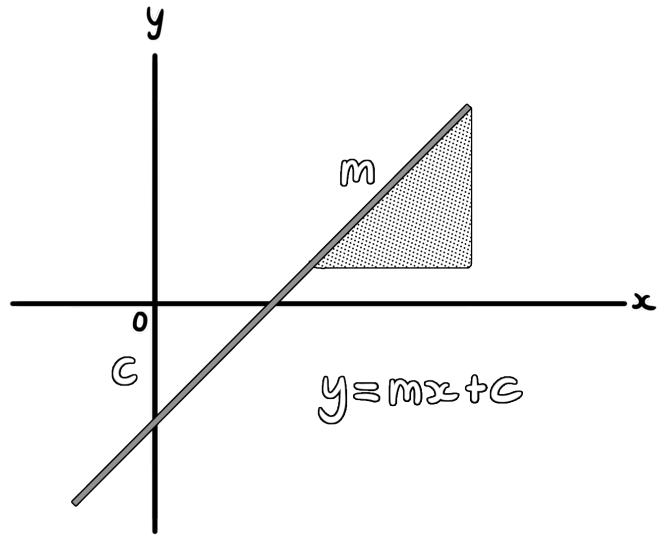
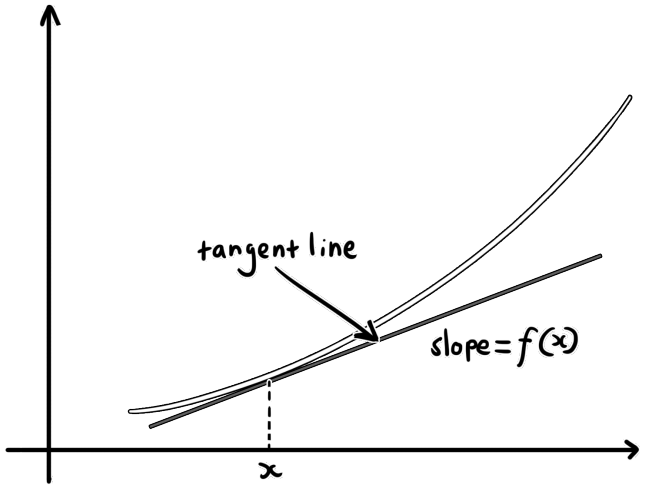
Differentiation – *A Level*









Differentiation – *A Level*

Write these expressions in the form x^n where n is written in its simplest form:

$\frac{x^2 \times x^5}{x^6}$ $\quad\quad$ $\frac{3x^2 + 2x - 12}{6x^2}$ $\quad\quad$ $\sqrt[3]{x^2}$

Find the equation of the straight line that passes through:

(0,-2) and (5,1) $\quad\quad$ (10,4) and (-2,-3)

Find the gradient of $f(x) = 2x^2 - x - 1$ at the point $(2, 5)$

Find the gradient of $f(x) = 5x^2 - 8x + 3$ at the point $(\frac{1}{2}, \frac{1}{4})$

Find the equation of the normal to the curve with equation $y = 2x^2 - 3\sqrt{x}$ at the point where $x = 4$:

Given that $f(x) = 3\sqrt{x} + \frac{1}{3\sqrt{x}}$ find $\frac{d^2y}{dx^2}$:

Find the coordinates of the stationary point on the curve with equation $y = 3x^4 - 96$