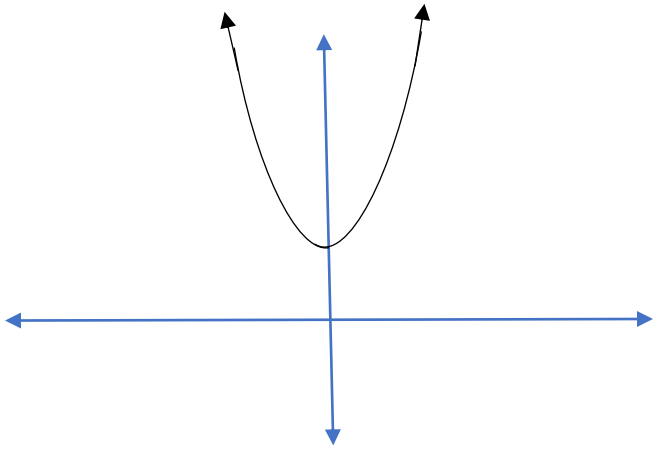
Converting non-linear equation to the linear form

If we have an equation such as $y = ax^2 + b$

And this equation is non-linear.

This equation can be represented as:-



If we want to convert this equation to its linear form this concept depends on assumption where we have to make this equation to be in

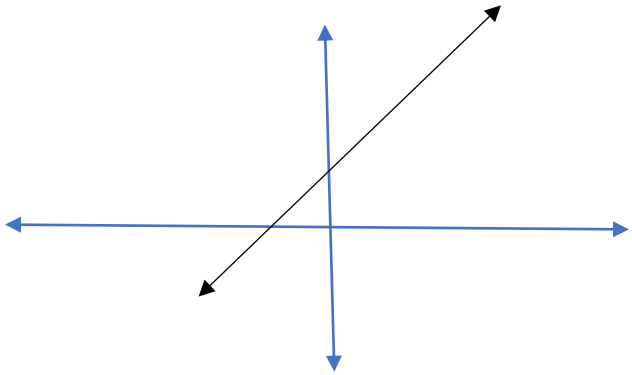
$$y = ax + b$$

And that will be achieved by (**Assumption**).

In this equation we can assume that

$y = Y$, $x^2 = X$

And the equation will be $Y = aX + b$



Examples….

➡ $y = \frac{a}{x^2} + b$

We can assume that

$y = Y$, $\frac{1}{x^2} = X$

To be the equation $Y = aX + b$

➡ $y = ae^{-bx}$

$\ln(y) = \ln(a) - bx$, we can assume that

$\ln(y) = Y$, $\ln(a) = A$, $x = X$

To be the equation $Y = A - bX$