

Solving ANYTHING! How to Use and Understand Newton's Method

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$5^x = 10$ $x^x = 10$

This sheet will be available under "Files", called **Newton1.PDF**

How to approximate solutions to ANY function using Newton's Method (Or Newton-Raphson Method)

A Numerical Method, with graphical interpretation of what it is doing

For a function, $f(x)=y$. Method: Make initial guess, X_0 . find $f(X_0)$.

Make a second (better) guess, X_1 close to X_0 . Find $f(X_1)$

Calculate $r = [f(X_1)-f(X_0)] / [X_1-X_0]$

Now, an even better guess will be: $X_2 = X_1 + [y-f(X_1)]/r$ $\frac{.61}{.1} = r=6.1$

$x^2 = 10$ $x_0=3$ $f(x_0)=9$ $x_1=3.1$ $f(x_1)=9.61$





