

CALCULUS
Newton's method
OLD

0530-1. We wish to solve $x^3 + 3x - 4 = 0$.

OLD

Starting with an initial guess of $x_1 = 1$,
compute the next two guesses, x_2 and x_3 , to
at least four decimals, using Newton's method.

0530-2. We wish to solve $x^3 + 3x - 5 = 0$.

OLD

Starting with an initial guess of $x_1 = 1$,
compute the next two guesses, x_2 and x_3 , to
at least four decimals, using Newton's method.

0530-3. We wish to solve $x^3 - 5 = 0$.

OLD

Starting with an initial guess of $x_1 = 1$,
compute the next two guesses, x_2 and x_3 , to
at least four decimals, using Newton's method.

0530-4. We wish to solve $x^5 + 3x - 4 = 0$.

OLD

Starting with an initial guess of $x_1 = 1$,
compute the next two guesses, x_2 and x_3 , to
at least four decimals, using Newton's method.

0530-5. We wish to solve $x^2 - 4 = 0$.

OLD

Starting with an initial guess of $x_1 = 1$,
compute the next two guesses, x_2 and x_3 , to
at least four decimals, using Newton's method.

0530-6. Using Newton's method, calculate $\sqrt[3]{7}$,
to five decimal places.



0530-7. Find the unique solution to $2x = \cos x$,
to five decimal places.

0530-8. Find a solution to $\tan x = 2x$,
to five decimal places,
by applying Newton's method to
 $f(x) = 2x - (\tan x)$, with $x_1 = 1$.

0530-9. We wish to solve $\sin t = 0$.

Let $t_1 > 0$ satisfy $\tan t_1 = 2t_1$. In 0530-8,
 t_1 is found, to five decimals. Starting with
this initial guess t_1 , compute the next six
guesses, t_2, \dots, t_7 , using Newton's method.

Draw a picture, to illustrate what is happening.