

CALCULUS
Newton's method
OLD2

0530-1. We wish to solve $2x^3 + x - 3 = 0$.

OLD2

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 $2x^3 + x - 4 = 0$.

OLD2

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 $x^4 - 5 = 0$.

OLD2

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 $2x^5 + x - 3 = 0$.

OLD2

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 $x^2 - 9 = 0$.

OLD2

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 $\sqrt[3]{9}$,
to five decimal places.



0530-7. Find the unique solution to $4x = \cos x$,
to five decimal places.

0530-8. Find a solution to $\tan x = 4x$,
to five decimal places,
by applying Newton's method to
 $f(x) = 4x - (\tan x)$, with $x_1 = 1.5$.

0530-9. We wish to solve $\frac{t}{1+t^2} = 0$.

Let $t_1 := \sqrt{3}/3$. 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.