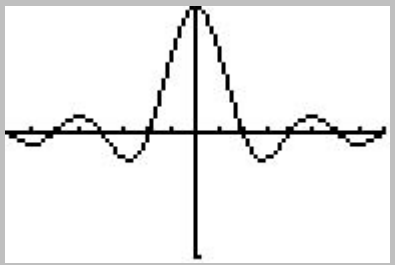
Graphics Calculators

Multiple Choice

Numerical methods make almost any multiple choice problem trivial to solve.



1 Solve the nonlinear equation: $\log(x) = 0.805 \sin(x)$

A. $x = 0.5$

B. $x = 1.2$

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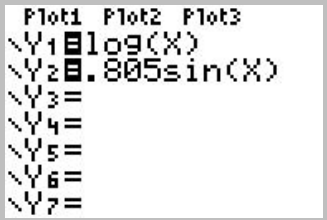
Now push the **Y=** button and set **Y₁=** to the left side of the equation and set **Y₂=** to the right side of the equation.



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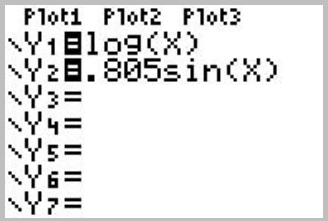

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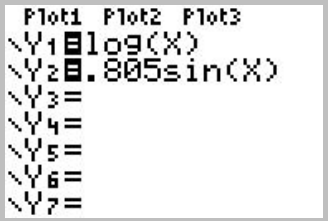
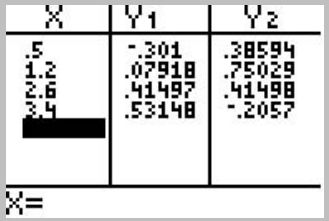


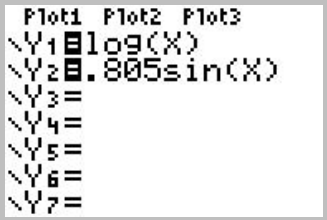


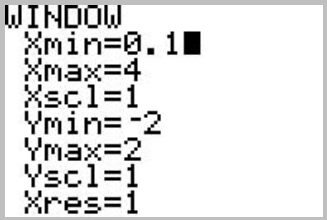
Push the **TBLSET** button (**2nd WINDOW**), move the cursor over **Indpnt: ASK** option and press **ENTER**.

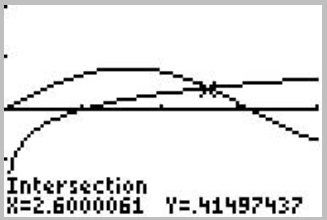
Now pres the **TABLE** button (**2nd GRAPH**) and enter the x values one at a time. When the value for **Y₁** equals the value for **Y₂**, you have found the answer.

Graphic Solution

Using the previous setup, set the **WINDOW** parameters and push the **GRAPH** button.







The intersection of the two lines is where the left side equals the right side.

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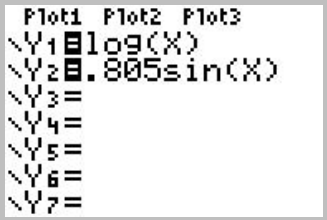

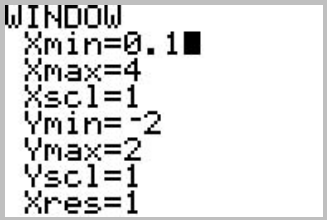

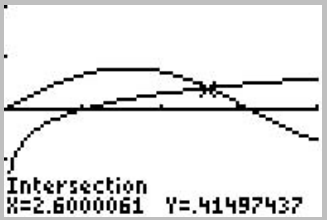

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One can use the calculator to find the intersection by hitting **CALC 5** (`intersect`) and basically hitting **ENTER** several times. Actually you are selecting which lines to intersect and specifying a search region. The default values are generally good enough.

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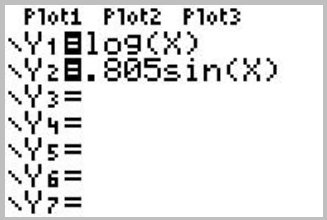

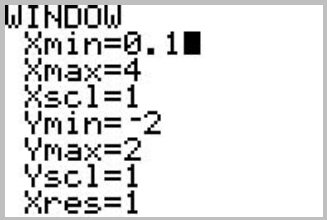

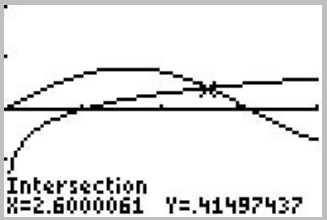

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Graphic solutions can only be used for problems which have one unknown variable and a known range and domain.

Practice Problem

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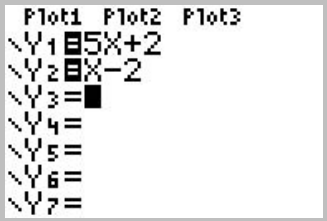

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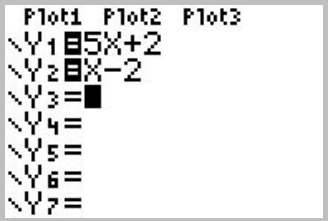

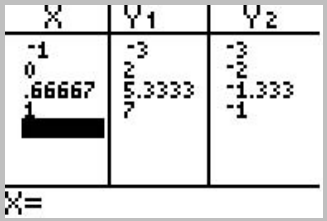

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