

Group: _____ Present: _____

1. There's no easy way to solve the equation $\sqrt{x} = 2 \ln x$ algebraically. Let's solve the equation graphically two ways.

First graph $Y_1 = \sqrt{x}$ and $Y_2 = 2 \ln(x)$.

Find a viewing rectangle which shows all intersections of Y_1 and Y_2 .

Viewing window: [_____, _____] \times [_____, _____]

Now approximate the x -coordinates of all intersection points accurate to three decimal places.

$x \approx$ _____

Next, find a function $f(x)$ whose zeros will be the same as the solutions of the equation $\sqrt{x} = 2 \ln x$.

$f(x) =$ _____

Graph $Y_3 = f(x)$, and find the location of all zeros of Y_3 , accurate to three decimal places.

$x \approx$ _____

Explain what you found: