Coding Assignment 1 - Golden Section Search

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1. Code the golden-section method as a general 1-D search routine. Though Matlab is recommended, you may use any language as you like. Start up Matlab files are provided (golden_section_method.m, myfunc.m). Complete your code to solve following problems:

   1). $f(x) = x\cos(\pi x^2)$, $x \in [0 \;\; 0.7]$, $\varepsilon = 1x10^{-4}$

   2). $f(x) = 4x^2 - 12x + 9$, $x \in [0 \;\; 3]$, $\varepsilon = 1x10^{-6}$

   3). $f(x) = 3x^5 - 7x^3 - 54x + 21$, $x \in [0 \;\; 3]$, $\varepsilon = 1x10^{-6}$

   Report the total number of function evaluations, the optimal point, and the minimum function value for each problem.

2. Submit your solutions to Canvas alongside the graphs of each function, and your code. Your code should be in a text file not Matlab file, and should be properly annotated using comments.