HW Exercises for Section 3: Graphing

1. Plot the graph of the function $f(x) = x\ sin(x)$ on an interval of the positive real axis large enough to exhibit its interesting behavior.

2. Now plot the graph of the function in Exercise #1 along with the graph of the "envelope" $y = \pm x$ on the same set of axis, using different colors for each curve.

3. Where does the graph $y = x\ \ sin(x)$ intersect the envelope $y = x$? You don't need Maple for this one.
Add these points, in yet a third color, to the graph you constructed in Exercise #2.

4. What's the derivative of $x\ sin(x)$ at the "x-values" of the points you found in Exercise #3? (No Maple or calculation needed here.)
Now use Maple's "diff", and "eval" commands to check your answer at several of these points.