Note: Some of these exercises require paper & pencil as well as MAPLE... for discussion of related MAPLE commands see MAPLE file maple1.mws.

1. Compute each quantity to 4 decimal places:
   a) \((\pi / 2)^2 + \sin (2)\)  
   b) \(\sqrt{2\pi + 4}\) 

2. Suppose \(f(x) = x^2 - 2x + 3\).
   a) Define \(f(x)\) using a MAPLE command.
   b) Use MAPLE to compute \(f(1)\) and \(f(2)\).
   c) Sketch the graph of \(f(x)\) by hand... then use MAPLE to sketch it & check your answer.

3. Use MAPLE to plot the graphs of
   \(f(x) = \cos^2 x\) and \(g(x) = \sin x\)
   on the same set of axes over the interval \([0, 2\pi]\).
   a) Judging from the graphs, how many points of intersection are there on this interval?
   b) Find the coordinates \((x, y)\) of each of these points of intersection to 3 decimal places.

4. Consider \(f(x) = \sqrt{\sin x + (x-\pi)^2 - 1}\) on \([0, 2\pi]\).
   a) Using MAPLE, sketch the graph of \(f(x)\) on \([0, 2\pi]\.
   Estimate, by eye, which subintervals of \([0, 2\pi]\) are included in the domain of \(f(x)\).
   b) On which subintervals of \([0, 2\pi]\) is the inequality \(\sin x + (x-\pi)^2 - 1 \geq 0\) satisfied? Answer by using MAPLE to sketch the left side of the inequality and locating its zero-crossings. Give the endpoints of the subintervals to three decimal places & compare your answer to your estimate in part a.)