1. Let $f(x) = \cos(x^2) - x\sin(x)$
   a. Plot $y = f(x)$ on the interval $[-3, 3]$
   b. Use Maple to find $f'(x)$
   c. Plot $y = f'(x)$ on the same set of axes as $y = f(x)$.
      Do your graphs look correct?

2. Find the maximum and minimum values of

$$g(x) = \ln(x) - \frac{x^2}{20}$$

   on the interval $[1, 12]$.

3. Let $\mathcal{I} = \displaystyle\int_0^1 x\sin(x^3)\, dx$.
   a. Use the *Approximate Integration* tutor to find L_{50}.
   b. Find a value of n so that L_n and R_n are within 0.01 of each other.
      How closely does this L_n approximate $\mathcal{I}$?