1. This example will consider the circle.
   a) What is the usual parameterization of a circle or radius $r$ in standard position (centered on the origin)?

   b) Find the unit tangent vector.

   c) Find the unit normal vector.

   d) Calculate the curvature.

   e) What is the radius of curvature? (This should be obvious, but calculate it anyway)

2. This question will study the special case where the curve can be written as a function in the form $y = f(x)$. The answers to parts a - e should be general (that is, the expression $f(x)$ should appear).
   a) What a parameterization of this curve?

   b) Find the unit tangent vector.

   c) Find the unit normal vector.

   d) Calculate the curvature.

   e) What is the radius of curvature?

   f) Using your answer from part (e), find an expression for the radius of curvature for a parabola. ($f(x) = ax^2$)