Name: ————————————————————————— **Section:** ——————————————

Clear your desk of everything except pens, pencils and erasers. **Show all your work.**
If you have a question raise your hand and I will come to you.

1. a) Find the first three non-zero terms of the Maclaurin series for $f(x) = \sin x$; b) Estimate the remainder at $x = 0.1$ (total 5 points).

   Answer: a) $\sin x \cong x - \frac{x^3}{3!} + \frac{x^5}{5!}$; b) $\frac{(0.1)^7}{7!}$ or 2×10^{-11}.

   (3 points for the correct answer to a) and 2 points for the correct answer to b).)

2. Draw the curve for following equations

   $$x = \sin t, \ y = -\cos t, \ \ 0 \le t \le \frac{3\pi}{2}$$

   (total 5 points).

   Answer: It is an incomplete circle of radius 1 that does not have the third quarter part.

   (5 points for the correct picture; partial points for partial results such as $x^2 + y^2 = 1$ or a full circle, etc)