

Math 142, Problem Set #11
(due in class Fri., 4/26/13)

Note: To get full credit for a problem, it is not enough to give the right answer; you must explain your reasoning.

Stewart, section 9.1, problems 12, 18, 20, 22.

Stewart, section 9.2, problems 4, 14, 26, 44.

Stewart, section 9.3, problems 12, 16, 30, 46.

Stewart, section 9.4, problems 8, 16, 26, 34.

Also:

- A. A particle has position $(t - \sin t, 1 - \cos t)$ at time t , for $0 \leq t \leq \pi$. (The path traced by the particle is half of a “cycloidal arch”; see page 485.) Find the area A under the curve traced by the particle.
- B. A particle has position $(t - \sin t, 1 - \cos t)$ at time t , for $0 \leq t \leq \pi$. (The path traced by the particle is half of a “cycloidal arch”; see page 485.) Find the length L traced by the particle. You will need to use the identity $2 - 2 \cos t = 4 \sin^2 t/2$ (compare with the first half-angle formula at the bottom of Reference Page 2 in Stewart).

Please don't forget to write down **who you worked on the assignment with** (if nobody, then write “I worked alone”), **and how much time you spent on each problem** (this doesn't need to be exact).