This assignment is in two parts. The first part is due at the start of class on Day 5. It will not be collected, but you are expected to complete these exercises, just to practice basic skills. If you feel that you need more practice, do more problems, or talk to me.

11.3 Exercises 3, 4, 7c, 15, 56

12.7 Exercises 4-6, 16, 36-37, 50

The second part is due on paper at the start of class on Day 8. Submit polished solutions, including all necessary work and no unnecessary work, in the order assigned.

A. 12.7 Exercises 81, 82

B. A helix is a curve that winds around a cylinder, gradually progressing in the direction of the cylinder's axis as it winds (see illustration below, which I got from the public domain). From above, the helix looks like a circle. Give a vector-valued function $\vec{p}(t) = (p_1(t), p_2(t), p_3(t))$ that parametrizes a helix of radius R in three-dimensional space. Also give a second helix $\vec{q}(t)$ such that $\vec{p}$ and $\vec{q}$ together form a double-helix of radius R, like a DNA molecule.