

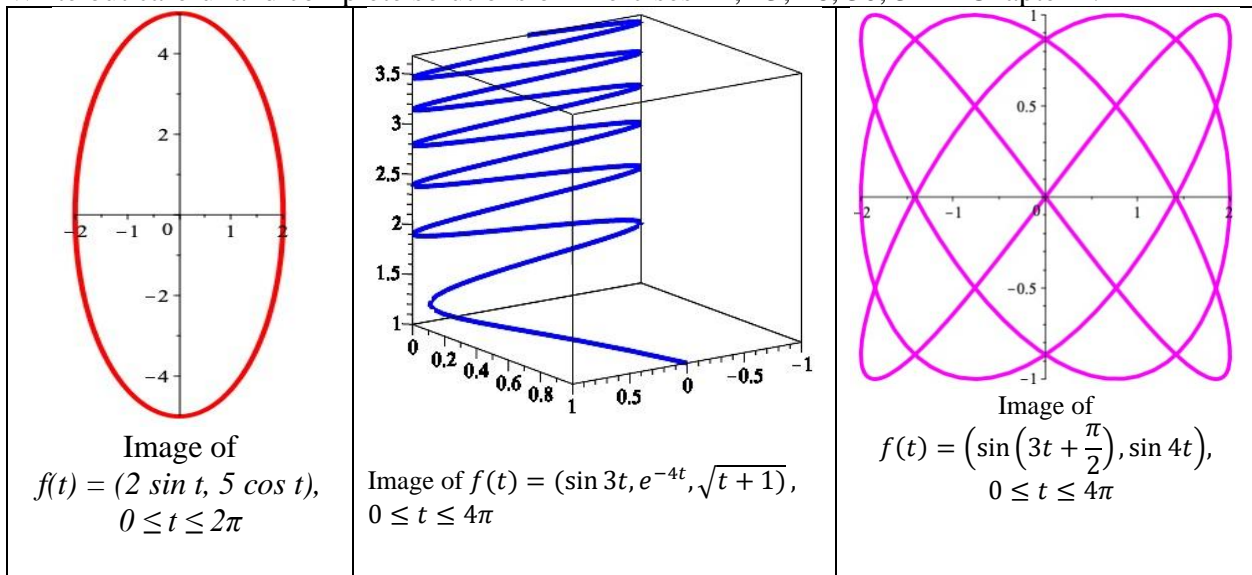
MATH 223A Fall 2022
Assignment 3
Due: Monday, September 19

Reading

Read carefully Sections 2.4 “Velocity, Speed and Acceleration,” Section 2.5 “Integrals,” and Subsection 2.6.1 “Projectile Motion” in our text *Multivariable Calculus: A Linear Algebra Based Approach*.

Writing

Write out careful and complete solutions of Exercises 21, 23, 26, 30, 31 in Chapter 2.



Some Answers and Hints

21. (1): There is a problem when $t = 0$. **(2)** Certain multiples of $\pi/2$ may be troublesome. **(3)** What is the domain of the natural logarithm function? When are fractions undefined?

23. Show that the set satisfies the definition of a vector space. As for dimension, let n be a positive integer and consider the linear dependence or independence of the set of functions $\{x^1, x^2, \dots, x^n\}$.

26. Use ordinary rules of differentiation.