

1. Read Marion through the end of Ch 6, and Ch 7.1-2

True/False: I read this material.

2. Marion Ch 6, Problems 2, 4, 5, 7, 10

For problem 2, parametrize the curves by t ; that is, treat $x(t)$ and $y(t)$ as separate functions of a parameter t . The functional will then depend separately on \dot{x} and \dot{y} .

For problem 4, note that a helix is a curve for which the height z changes at a constant rate with respect to the angle ϕ .

In case you don't recognize it by the obscure description, problem 5 is the soap film problem we set up in lecture.

For problem 7, you may set this up as a one-dimensional calculus problem by assuming that the trajectories are straight lines in the two different media.

For problem 10, which is a normal calculus problem, use the method of Lagrange multipliers.