

Homework 2: Even Solutions

6.1

2.) Plots that resemble $-1/2x^2 + x$ and $-1/2x^2 + x + 1$. (It's supposed to be a sketch)

8.)

t	1	2	3	4	5
P	1	0	-1/2	0	1

10.) a.) Critical points are $x = -1$, $x = 1$, and $x = 3$. b.) $F(x)$ has a local minimum at -1, a local maximum at $x=1$, and local minimum at $x=3$. c.) The graph is a W shape. The most important features is that it decreases until -1, increases until 1, and decreases until 3, then increases again. The other important feature is that the function should have roughly the same value at -1 and 3.

6.2

28.) $-\cos x + \sin x + C$

40.) $F(x) = -\cos x + 1$

6.3

10.) Check, using the product rule to differentiate the function and making sure it satisfies, and then making sure the initial condition is satisfied as well.

18.) 5/6 miles.