

**Classical Mechanics 2, Spring 2014 CMI**

Problem set 1

Due by the beginning of lecture on Wednesday Jan 8, 2014

Phase portrait

1. ⟨6⟩ Consider a free particle moving on the real line. Draw a phase portrait, showing at least 6 trajectories of which three are qualitatively different. Briefly mention in words the nature of motion along three qualitatively different trajectories. Mark arrows showing the direction of time evolution and label the axes. Mention a qualitative difference between trajectories in phase space as opposed to those on configuration space.