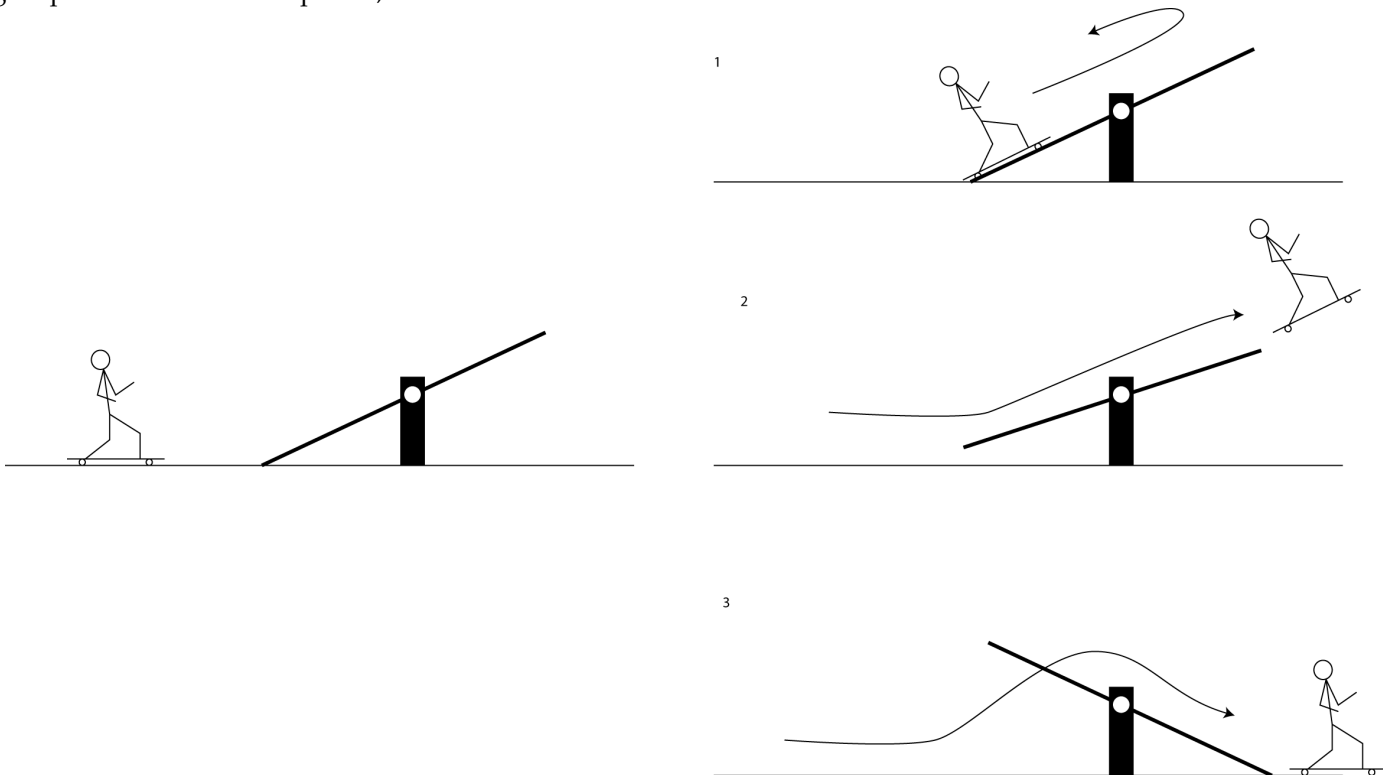


Key Frames

Create a set of key frames for this system that help you think through what the different parts of the system are, and how they move with respect to one another. Be sure to try to capture the different types of behavior you think might occur! These key frames should come in handy below both when you try to identify state variables, and when you try to do some estimation!

My best first guess at this is that there are three options for motion: first, the skateboarder could be going so slowly that they don't make it over. Second, the skateboarder could be so fast that they fly off the ramp. And finally, the skateboarder could be going at just the right speed to have the ramp land, and allow a smooth exit.



A comment is in order here: if we think through this, it seems pretty clear that in some situations, it might well be impossible for the system to work. For example, if the skateboarder weighed far less than the ramp, you could imagine that the skateboarder might either end up going off on the right in midair, or would slide back down and roll off on the left.