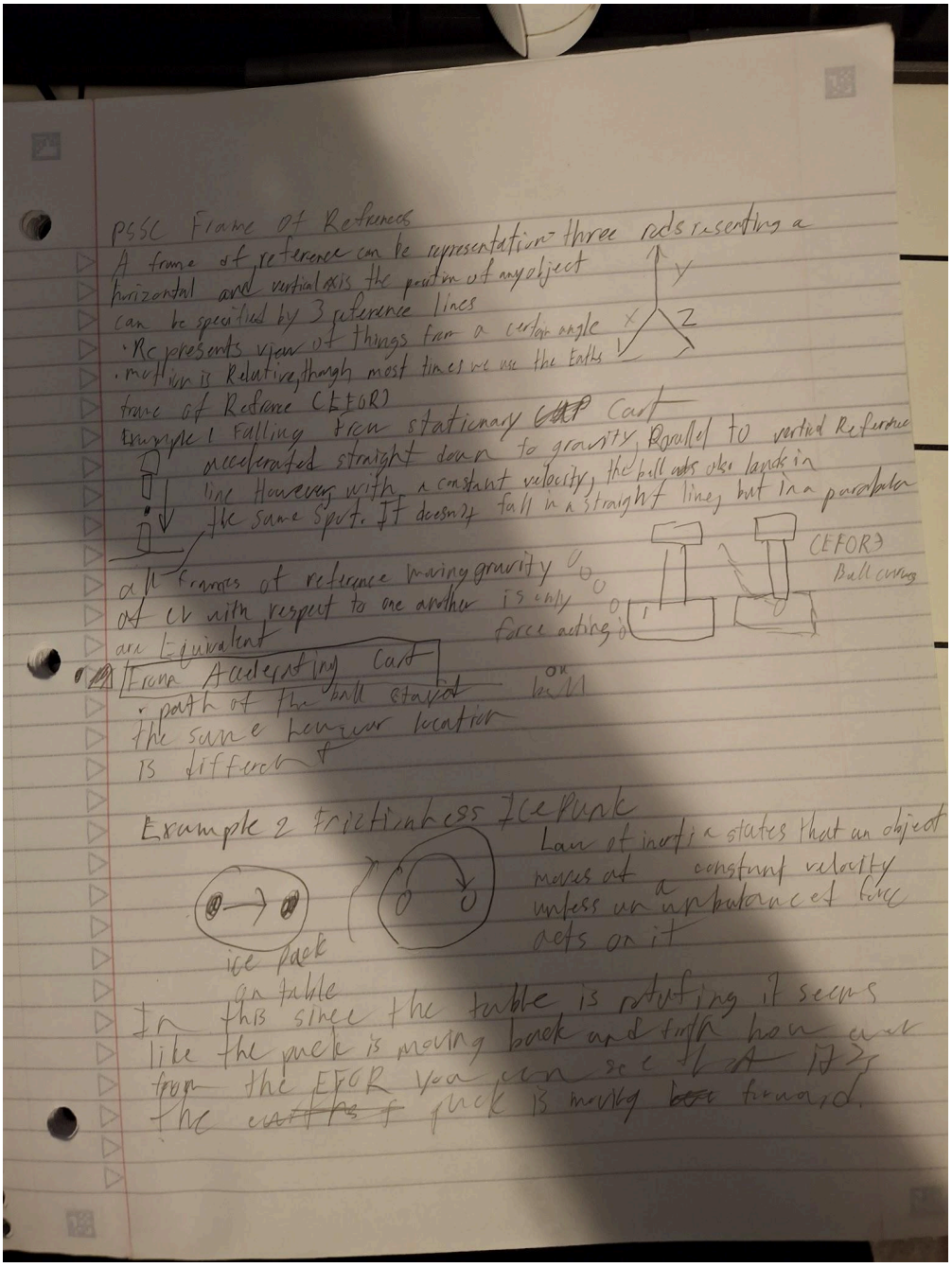
Order	Experiment	Inertial
6	ball falls from accelerating cart, cart FOR	no
3	ball falls from CV cart, cart FOR	yes
2	ball falls from CV cart, EFOR	yes
1	ball falls from stationary cart, EFOR	yes
12	Foucault pendulum on rotating platform, EFOR (stars)	no
11	Foucault pendulum on rotating platform, platform FOR (earth)	yes
4	puck back/forth on CV cart, cart FOR	yes
5	puck back/forth on CV cart, EFOR	yes
7	puck back/forth on rotating table, Dr Ivey FOR	no
8	puck back/forth on rotating table, EFOR	yes
9	puck held by rubber band on rotating table, EFOR	yes
10	puck held by rubber band on rotating table, Dr Hume FOR	no

The law of inertia holds when a constant velocity is present, and no outside forces interact with the system that cause unexpected outcomes. In addition, under the earth's frame of reference, the law of interaction will always hold. We figured this out during the experiment in which there was a rotating table and there was a puck being pushed forward but it was coming back to Dr.Hume’s in his perspective we didn’t know why it was happening however when we came out to Earth’s frame of reference we could see the puck was moving in a straight line.

Notes:



PSSC Frame of References

A frame of reference can be representation three rods representing a horizontal and vertical axis the position of any object can be specified by 3 reference lines

- Represents view of things from a certain angle
- motion is Relative, though most times we use the Earth's frame of Refrence (EFOR)

Example 1 Falling from stationary ~~CEFOR~~ Cart

accelerated straight down to gravity, Parallel to vertical Reference line However with a constant velocity, the ball acts as it lands in the same spot. It doesn't fall in a straight line, but in a parabola

all Frames of reference moving gravity at CV with respect to one another is only force acting on ball are Equivalent

From Accelerating Cart

- path of the ball stays the same however location is different

Example 2 Frictionless IcePuck

Law of inertia states that an object moves at a constant velocity unless an unbalanced force acts on it

In this since the table is rotating it seems like the puck is moving back and forth however from the EFOR you can see that it's the ~~earths~~ puck is moving ~~back~~ forward.