**Lab 5 Observations**

**Chapter 8, Problem 1:**

This question asked me to observe what happens if I pause Snail Bait during a jump with both the provided code and with the pause() and unpause() methods in the jump behavior commented out.

When jumping and then pausing with the provided, unmodified code, the player freezes in midair and then resumes from that position to complete the jump. However, I noticed that if you jump while paused, the timers will begin anyway. This means that unpausing will put you wherever your position would be according to the timer. This can cause you to fall through the floor.

When jumping and then pausing with the pause() and unpause() methods commented out, the player freezes in midair as normal. However, if you pause and then resume when ascending, the player immediately starts to descend instead of completing the ascent. Similarly, if you pause and then resume when descending, the player will “warp” to where they would have been upon landing the jump. This shows the importance of these timing functions when relating to game behavior.

**Chapter 8, Problem 3:**

This question asked me to change the JUMP\_DURATION constant and comment on its effects. Additionally, the assignment wanted me to change the JUMP\_HEIGHT variable and comment on the combined changes.

When changing the JUMP\_DURATION variable to 2000ms, the jump indeed takes twice as long to complete for the same amount of height, which makes it look like the jump is at lower speed. However, changing JUMP\_HEIGHT to double the original restores the original speed due to the calculation of deltaY being the same.

A variety of effects can be product with this, such as a very fast jump by changing JUMP\_DURATION to 500ms with any JUMP\_HEIGHT above 60. I changed my code so that JUMP\_HEIGHT was 360 and JUMP\_DURATION was 750ms because I thought going off screen and coming back super quickly was pretty funny.

The ultimate point is that no matter what your JUMP\_HEIGHT is set to, the “speed” of the jump will always be calculated according to your JUMP\_DURATION value.