Full Name: _____

EEL 3135 (Spring 2021) – Lab #03 **Due: Feb. 9 - Feb. 15 (On Lab Day)**

Group Question

- This group problem is extra credit on your lab assignment.
- Work as a group to complete this problem. It is designed to take an hour or less.
- You may get help from your TA (but he or she will not give you direct answers).
- Have fun!

Question #1: This assignment modifies parts of Lab 3 to work with video. Submit a published MATLAB PDF with your code and output video from each function you create in part (a).

Included is a video `wheel_video.mp4` [1] and skeleton code that plays the video at a rate of 60 Hz. The wheel in the video spins at a rate of approximately 0.75 rotations per second (Hz). However, since there are 5 spokes, we really observe the wheel repeating with a rate 3.75 Hz (0.75 times 5). Use the provided skeleton code to complete the questions below.

(a) Create a function `z = video_sample(x, Dx, Dy, Dt)` that can sample a video `x`. Sample every `Dx` horizontal pixels, every `Dy` vertical pixels, and every `Dt` time values. The output of the function is the sampled video z.

(b) Sample the video to have 54 pixels in the horizontal direction and 90 pixels in the vertical direction.

(c) Sample the video so that the wheel does not move (note: it will move a little bit).

[1] The video is a modified version of the video from `https://www.videvo.net/video/spinning-wheel/793/`