

# PROBLEM

In this problem, you will perform camera calibration using the concepts you have learned in class. Assuming a **pinhole camera model** and **ignoring radial distortion**, we will be relying on a calibration target (**checkerboard** in our case) to estimate the camera parameters. The calibration target used can be found [here](#).

This was printed on an A4 paper and the size of each square is **21.5 mm**. Note that the Y axis has an odd number of squares and X axis has an even number of squares. It is a general practice to neglect the outer squares (extreme squares on each side and in both directions).

Thirteen images taken from a Google Pixel XL phone with focus locked can be downloaded from [here](#) which you will use to calibrate.

For this question, you are allowed to use **any in-built** function.

- Find the checkerboard corners using any corner detection method (inbuilt OpenCV functions such as [findChessboardCorners](#) are allowed) and display them for each image.
- Compute the Reprojection Error for each image using built-in functions in OpenCV
- Compute the K matrix
- How can we improve the accuracy of the K matrix?