To resolve a line pair, at least three rows of sensors are needed.

This means the line pair on the chip has a width of 0.0205 mm. On the Object, the width of the line pair is:

Therefore, the camera can resolve line pairs per mm.

The running command for question 3:

% neareset neighbour

y = Nearest\_11510478('rice.tif' ,[461,461]); % 461 = round(256\*1.8)

imwrite(y, 'Enlarged\_11510478.tif');

y = Nearest\_11510478('rice.tif' ,[205,205]); % 205 = round(256\*0.8)

imwrite(y, 'Shrinked\_11510478.tif');