# EE 3921

## Dr. Johnson

# Homework 9

1 – Calculate the minimum size required for the On-Chip memory block inside the Character buffer block if we doubled the size (W and L) of the characters in pixels.(assume a 640x480 display)                    50pts

Character block buffer holds **asci** characters (1 byte each)

At 2x each character would take up 16 pixels x 16 pixels on the screen

The maximum number of characters that fit on a 640 x 480 display would be 40 x 30 = 1200

Each character is 1 byte (ascii)

1200 bytes

_____ bytes

2 – Calculate the minimum size required for the SDRAM used in our pixel buffer example from class.(assume no backbuffer support and a 8x scaler block instead of the examples 2x scaler)   (assume a 640x480 display)        50pts

pixel buffer holds pixel information

16bits / pixel = 2bytes/pixel

The maximum number of independent pixels that fit on a 640 x 480 display with the 8x block in the design is 80 x 60 = 4800

2 bytes/pixel

9600 bytes

_____ bytes