Name: Jay Kalyanbhai Savani
CWID: 20009207

#11.5: As described in the text, the PCI-Express bus consists of thirty-two "lanes ". As of January 2009, each lane is capable of a maximum data rate of 500 MB per second. Lanes are allocated to a device 1,2,3,8,16, or 32 lanes at a time.

Assume that a PCI-Express bus is to be connected to a high-definition video card that is supporting a 1920 x 1080 true color (3 bytes per pixel) progressive scan monitor with a refresh rate of 60 frames per second. How many lanes will this video card require to support the monitor at full capability?"

Ans: High definition: 1920 * 1080 * 3 * 60 = 373,248,000 bytes/second

(373,248,000) / (500 * 1024 * 1024) = 1 lane

#11.7 "How many PCI-Express lanes are required to support a 10gb per second Ethernet card?"

Ans: Each bus has two simplex line pairs that carry data, addresses, and control signals,

in both directions at the maximum rate of 2GB/second approximately.

10/2=5 lanes