Quiz 14 – to be finished in 15 minutes

Student Name:

Question 1

Suppose we build a memory with 1M*8 bit total memory capacity (1M is the total number of addresses and 8 is the width of data bus), using 32K * 8 memory chips (32K is the total number of addresses and 8 is the width of data bus).

How many address bits (width of address bus) are needed for the memory to be built?

3 points

Log_2 (1M) = 20

How many 32K * 8 memory chips are needed to build the expected memory?

3 points

(1M * 8) / (32K * 8) = 32

How many selection bits should be allocated out of the total address bits for the memory to be built?

2 points

20 – $log_2$32K = 20-15 = 5