

## Memory Systems

### Part A

How many address lines does the memory system require? 24

How many data lines does the memory system require? 8

How many address lines does the DRAM memory chip require? 20

How many memory chips are required for the system?  $16 \times 2 = 32$

What kind of address decoder is required? 4 to 16

### Part B

How many address lines does the DRAM memory chip require? 22

How many memory chips are required for the system?  $4 \times 2 = 8$

What kind of address decoder is required? 2 to 4

### Part C

How many address lines does the DRAM memory chip require? 14

How many memory chips are required for the system?  $1024 \times 8 = 8196$

What kind of address decoder is required? 10 to 1024