



# Solutions

Note: solutions to simulation exercises are not included. Chapter 12 is not yet complete, and a few other solutions are presently missing. DH 8/4/04

## Chapter 1

1.1 Starting with 42,000,000 transistors in 2000 and doubling every 26 months for 10

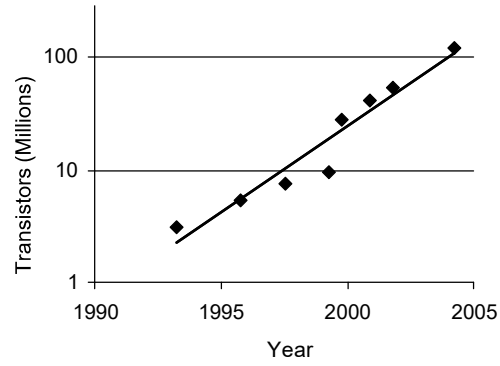
years gives  $42\text{M} \cdot 2^{\left(\frac{10 \cdot 12}{26}\right)} \approx 1\text{B}$  transistors.

1.2 Some recent data includes:

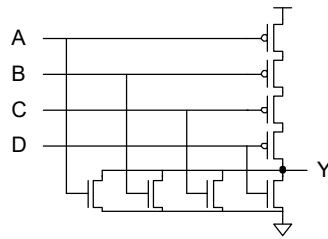
**Table 1: Microprocessor transistor counts**

Date	CPU	Transistors (millions)
3/22/93	Pentium	3.1
10/1/95	Pentium Pro	5.5
5/7/97	Pentium II	7.5
2/26/99	Pentium III	9.5
10/25/99	Pentium III	28
11/20/00	Pentium 4	42
8/27/01	Pentium 4	55
2/2/04	Pentium 4 HT	125

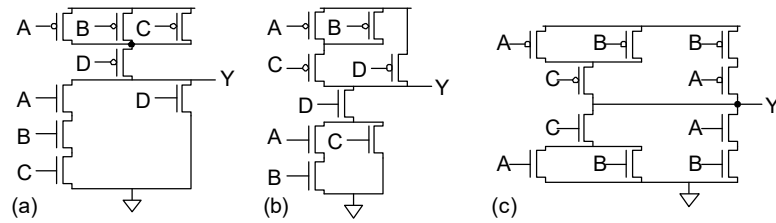
The transistor counts double approximately every 24 months.



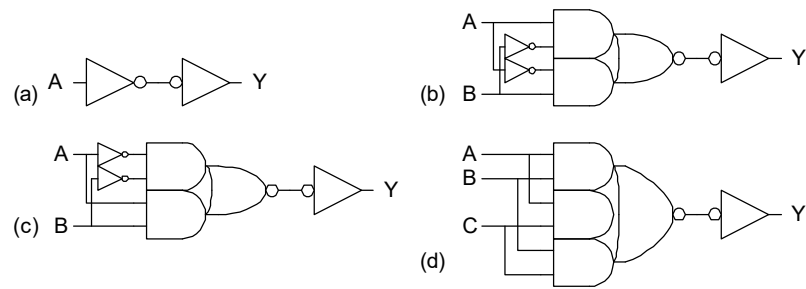
1.3



1.4



1.5



1.6

