

De wet van Moore

1. $A = 4 \cdot 2^{(\frac{1}{2} \cdot 14)} = 512$

Dus 512 transistors in 1975

2. $A = 4 \cdot 2^{(\frac{1}{2} \cdot 43)} = 11863283,2$

Per transistor: $\frac{8}{11863283,2} \text{ mm} = 6,743 \cdot 10^{-7} \text{ mm}$

3. Aantal transistors: $8 \cdot 10^7$

Dus: $4 \cdot 2^{(\frac{1}{2} \cdot t)} = 8 \cdot 10^7$

$$t = \frac{\log\left(\frac{8 \cdot 10^7}{4}\right)}{\log 2} = 48,51$$

Dus vanaf 2010 geldt de wet van Moore niet meer.

4. $4 \cdot 2^{(\frac{1}{2} \cdot a)} = 10^9$

$$a = 2 \cdot \frac{\log(10^9 / 4)}{\log 2} = 55,8$$

$$2250 \cdot 2^{(\frac{1}{2} \cdot p)} = 10^9$$

$$p = 2 \cdot \frac{\log(10^9 / 2250)}{\log 2} = 37,5$$

A: $1961 + 55,8 = 2016,8$

P: $1971 + 37,5 = 2008,5$

} verschil is 8 jaar