

$$2) a) A: (50 \times 2 + 10 \times 4 + 2 \times 3) \times 10^6 = 146.000.000$$

$$B: (80 \times 2 + 5 \times 4 + 1 \times 3) \times 10^6 = 183.000.000$$

$$\frac{183}{146} = 1.253 \text{ times faster.}$$

A faster than B. (1.253 times)

$$b) \text{CPU time} = \text{CPU clock cycles} / \text{clock rate}$$

$$100\text{ms} = 146 \times 10^6 \text{ cycles} / \text{clock rate}$$

$$\text{Clock rate} = 146 \times 10^6 / 0,1\text{s}$$

$$\text{clock rate} = 146 \times 10^7 \text{ Hz} = 1460000000 \text{ Hz}$$

$$1) 120 \times 0,8 = 96 \text{ processor solved.}$$

$$\text{Today} \Rightarrow 96 \text{ processor} \Rightarrow 10000 \$$$

$$1. \Rightarrow 96 - (96 \times 0,1) = 86 \text{ processor} \Rightarrow 10000 - (10000 \times 0,2) = 8000 \$$$

$$2. \Rightarrow 86 - 8,6 = 77 \text{ processor} \Rightarrow 8000 - 1600 = 6400 \$$$

$$3. \Rightarrow 77 - 7,7 = 69 \text{ processor} \Rightarrow 6400 - 1280 = 5120 \$$$

$$4. \Rightarrow 69 - 6,9 = 62 \text{ processor} \Rightarrow 5120 - 1024 = 4096 \$$$

$$4096 / 62 = 66,0645161$$