

# Questions and Tasks for Lecture 1

**Question 1-1: Nearly all source code examples use Register # 16. Why not Register # 0?**

**(Hint: Change the source code of one example to use R0 instead of R16 and try to understand the resulting error message when assembling.)**

**Try to find out which types of instructions can only use R16 and above (Use the Instruction Set Manual for 8-bit-AVRs provided by Microchip for that).**

# Questions and Tasks for Lecture 1, Continued

**Question 1-2: Which range of integer numbers can be handled**

- a) in 8-bits,**
- b) in 16 bits,**
- c) in 24 bits, and**
- d) in 32 bits.**

**(Hint: Under Windows use the provided calculator in the „Programmer“ mode and switch to the Hexadecimal input mode.)**

# Questions and Tasks for Lecture 1, Continued

**Task 1-3: Find out how many registers the following CPUs provided and at which maximum clock frequencies they ran:**

a) ZUSE Z4

b) PIC8

c) 8086

d) Z80

e) 6502

**Compare that with an ATtiny13 and ATtiny24 (use Microchips Data Books for these).**