1) 16
2) 32, 1
3) Program counter
4) 4000000
5) 16
6) 16000000
7) Since there are 4 bits provided in opcode do address the registers which only allows for 16 different values. we us the register 16 to 32.
8) The ADD instruction has 5 bits in the opcode for register addressing where LDI has 4 bits, therefore most of the registers can be used.
9) Since LSL(left shift) on a values is equal to doubling it, and ADD(adding) a value to itself doubles it aswell, the output would be the same for both instructions however both instructions are different.
10) 0, no
11) 4DE2
12) F2EC
13) 230F
14) 000D
15) CPI R30, 196
16) MOV R32, R14
17) MULS R28, R0
18) .
19) .set isDefined = 0
20) 00
21) 04
22) F0
23) 32
24) LDS R2,0x00F0
25) 22, 20, 21
26) 21, 4C
27) 01
28) -29
29) LDI R16, 9
    loop:
    DEC R16
    INC R17
    CPI R16, 0
    BRNE loop
30) incorrect return address will be pushed since the stack needs to be poped 3 times (return address pushed to stack when function called).