```
;Lab #4 LC-3 Tutorial
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;Date: 10-14-2013

0011 0000 0000 0000   ;start the program at location x3000
0101 001 001 1 00000  ;clear R1, used for running sum
0101 100 100 1 00000  ;clear R4, used for counter
0001 100 100 1 01010  ;load R4 with #10, the number of times to add (c)
1110 010 011111100    ;load the starting address of the data
0110 011 010000000    ;load the next number to be added
0001 010 010 1 00001  ;++p
0001 001 001 0 00 011 ;add next number to the sum
0001 100 100 1 11111  ;--c
0000 001 111111011    ;do it again if the counter is not yet zero
1111 0000 00100101    ;halt
```

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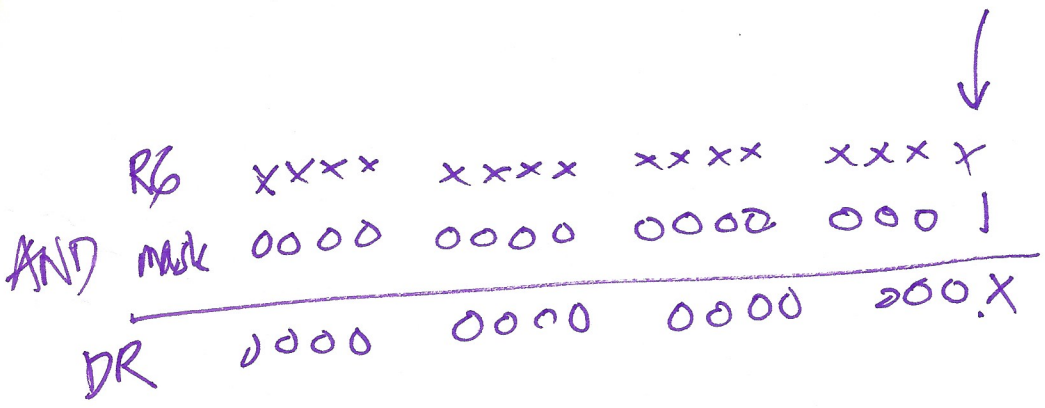
RG xxxx xxxx xxxx xxxx
AND mask 0000 0000 0000 0001
DR 0000 0000 0000 000X

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1. at 3 0110 1111 0000 0011 ✓
   at 6 1101 0000 0010 0001 ✓

2. a. 1's 0110 0100 1100 0110 25,796
   X 2's 0110 0100 1100 0110

   16384 8192 1024 128 64 4 2

   b. ✓ 0000 0000 0110 0101
   64+32 + 4 + 1 = 101 ⇒ e

   c. ✓ at 7 at 6
   1100 0011 0101 1010 1101 0000 0010 0001
   128 2 2^{22} 2^{20} 2^{19} 2^{17} 2^{15} 2^{14} 2^{12} 2^5 2
   134 5951522
   1 1000011 10110101101000000100001
   − exponent mantisa
   $-1.10110101101000000100001 \times 2^{7}$

   d. ✓ at 2 0001 1110 0100 0101 = 7750 7749
   12 11 10 9 6 2 0

.5 ✓ at 3 0110 1111 0000 0011 = 28,419
   14 13 11 10 9 8 1 0

13. 0110 0100 1100 0110

R2 R3

DR BaseR offset 6

LDR

4. 0000 0000 0000 0000

X