

1) What is R0 set to in the following code:

```
mul10    .ORIG    x3000
         ADD     R0,R1,R1
         ADD     R0,R0,R0
         ADD     R0,R0,R1
         ADD     R0,R0,R0
         HALT
```

2) What is R0 set to in the following code:

```
pop      .ORIG    x3000
         AND     R0,R0,#0
         ADD     R1,R1,#0      ;; test the msb
         BRzp   skipf
         ADD     R0,R0,#1
skipf    AND     R2,R2,#0
         ADD     R2,R2,#15
loop    ADD     R1,R1,R1
         BRzp   skip
         ADD     R0,R0,#1
skip    ADD     R2,R2,#-1
         BRp    loop
         HALT
         .END
```

3) What does the following code do:

```
rev      .ORIG      x3000
        LEA        R0,FILE      ;; R0 is beginning of string
        ADD        R1,R0,#-1
LOOP1    LDR        R3,R1,#1
        BRz        DONE1
        ADD        R1,R1,#1
        BR         LOOP1

DONE1    NOT        R2,R0
        ADD        R2,R2,R1

LOOP2    ADD        R2,R2,#0
        BRn        DONE2
        LDR        R3,R0,#0
        LDR        R4,R1,#0
        STR        R4,R0,#0
        STR        R3,R1,#0
        ADD        R0,R0,#1
        ADD        R1,R1,#-1
        ADD        R2,R2,#-2
        BR         LOOP2

DONE2    HALT

FILE     .STRINGZ  "This is so much fun!"
        .END
```