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

```
        .ORIG   x3000
mul10   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:

```
        .ORIG   x3000
pop     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        ;; now test the other 15
        BRzp    skip
        ADD     R0,R0,#1
skip    ADD     R2,R2,#-1
        BRp     loop
        HALT
        .END
```

3) What does the following code do:

```
        .ORIG    x3000
rev     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
```