For the following problems it may be helpful to know that MVN Rx, Ry will copy into Rx the logical negation of Ry.

1. Write an ARM program that performs the following logical function:

```
R0
   AND
   NAND
   XOR
R1
R2
```

2. Write an ARM program that performs the following logical function:

```
R0
   AND
   OR
   XNOR
   AND
   NAND
   NOR
R1
R2
```

3. Write an ARM program that performs the following logical function: \( R3 = \overline{(R0 \land R1) \lor R2} \)

4. Write an ARM program that performs the following logical function: \( R2 = \overline{R0 \lor R1} \land (R2 \lor \overline{R1}) \lor \overline{R1 \land R0} \)

5. Write an ARM function that emulates a multiplexor. That is, R4 contains the value, R5 contains the selector value (which you can assume is between 0 and 15). Your function must write out the value in R4 to the register whose number is in R5. So, for instance, if R4 = 0xFEEDFACE and R5 = 12, your function should put the value 0xFEEDFACE into R12.