CS1021 Tutorial 3

Q1 Translate each of the following pseudo-code statements into a sequence of ARM assembly language instructions. Assume that x and y are signed integers and that x is in R1 and y in R2.

(i)
```
if (x== 0)
    x = x + 5;
```

(ii)
```
if (x >= 5)
    x = 0;
```

(iii)
```
x = 10;
y = 5;
while (x > 0) {
    y = y*x;
    x = x - 1;
}
```

(iv)
```
if (x < 9) {
    x = x + 1;
} else {
    x = 0;
}
```

(v)
```
if (x > 9) {
    x = 0;
    if (y > 9) {
        y = 0
    } else {
        y = y + 1;
    }
} else {
    x = x + 1;
}
```

Q2 Write an ARM assembly language program to compute x^y. Assume x and y are unsigned integers and that x is in R1, y in R2 and the result is stored in R0.