Mh4718 Worksheet 3

1. Without using any calculating device determine the last digit of 2^{51}.

2. When the code:

```
cout.precision (20);
cout<<pow(5.0,-31)<<endl;
cout<<pow(2.0,31)<<endl;
```

   is run you will get the following outcome on the screen:

   2.1474836480000002e-022
   2147483648

   Discuss.

3. Indicate the contents of the four bytes used to store each of the following values as **int** type variables:
   (i) 27556, (ii) -23, (iii) 126, (iv) -126.

4. What is the value (in base ten representation) of the **int** type variable that is stored in the following bytes:
   (i) 00000000 00000000 11001110 01101101
   (ii) 00011111 11111111 11111110 00000000
   (iii) 11111111 11111111 11110010 00011100
   (iv) 00000000 00000000 00101001 00101001

5. What are the values of the floats respectively stored in the following bytes:

   (i) 01011110 10100000 00000000 00000000

   (ii) 10011110 00000000 00000000 00000000

   (iii) 10111100 10010010 01001001 00100101

   (iv) 00000000 00110000 00000000 00000000

   (v) 01111111 10000000 00000000 00000000

6. What will be the contents of the 4 bytes used to store each of the following values when they are assigned to **float** type variables? (i) 2^{25}; (ii)$2^{25}+1$ (ii)2^{-25}; (iii) 0.3; (iv) -0.1.
   Determine the exact value, in base ten notation, of what is stored in each case.