Exercise 1, 2 and 5 rory lange

BE. 120 Lesson 12.

1) a) $(25)_{10}$ & $(13)_{10}$ = $(01001)_2$ = $(9)_{10}$

b) $(27)_{10}$ & $(12)_{10}$ =
```
  16 8 4 2 1
  1 1 0 1 1
  0 1 1 0 0
  0 1 0 0 0
```
= $(01000)_2$ = $(8)_{10}$

c) 3 & 66 =
```
  64 32 16 8 4 2 1
  0  0  0  0 0 1 1
  1  0  0  0 0 1 0
  0  0  0  0 0 1 0
```
= $(0000010)_2$

$(2)_{10}$

2) a) 25 |
```
   16 8 4 2 1
   1  1 0 0 1
   0  1 1 0
```
   13 | 1 1 0 1 = $\boxed{29}$

b) 27 |
```
   16 8 4 2 1
   1  1 0 1 1
   0  1 1 0 0
```
   12 | 1 1 1 1 = $\boxed{18}$

c) 7 |
```
   16 8 4 2 1
   1  0 0 0 0
   0  0 1 1 1
```
   14 | 1 0 1 1 1 = $\boxed{23}$

5)
```
11.01 . 1.000 . 10.11 . 00.01
11.11 . 1.000 . 10.11 . 00.11
11.01 . 0.000 . 00.00 . 01.11
11.11 . 1.000 . 10.11 . 11.11
```

Exercise 3

Code   Stop Simulation   Export   Share

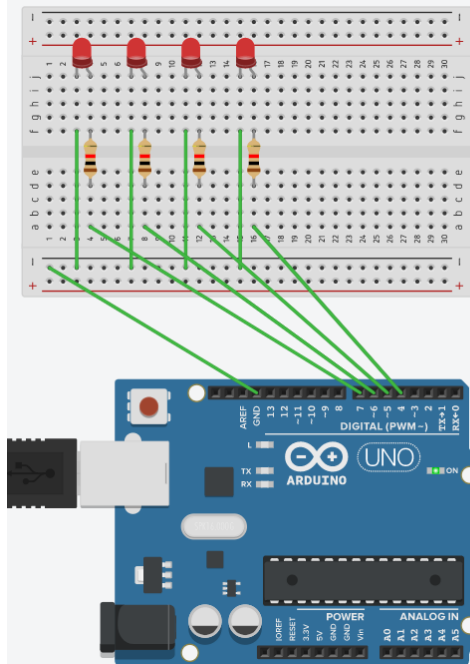**Arduino Uno R3**

Name 1

Text   1 (Arduino Uno R3)

```
1  void setup()
2  {
3  byte A = B10010;
4  Serial.begin(9600);
5  A = A ^ B00100000; //Bitwise XOR
6  Serial.print("A^ B00100000 = ");
7  Serial.println(A,BIN); }
8  void loop(){ }
```

Serial Monitor

```
A^ B00100000 = 110010
```

Exercise 4 code is bugged it says there is an error but there isn't an error

```
1   int x = 0;
2   int leds[] = {4,5,6,7};
3
4   void setup() {
5     for (int i = 4; i <= 7; i++) {
6       pinMode(i, OUTPUT);
7     }
8   }
9
10  void loop() {
11    x = x ^ 1;
12    for (int i = 4; i <= 7; i++) {
13      digitalWrite(i, x);
14    }
15
16    delay(500);
17  }
```