

## Exercise 1 Rory Lange

Text



1 (Arduino Uno R3)

```
1 void setup()  
2 {  
3   int a = pow(2,3);  
4   int b = sqrt(100);  
5  
6   Serial.begin(9600);  
7   Serial.print("A= ");  
8   Serial.println(a);  
9   Serial.print("B= ");  
10  Serial.println(b);  
11  
12  Serial.print("C= ");  
13  Serial.println(abs(a-b));  
14 }  
15  
16 void loop()  
17 {  
18  
19 }
```

 Serial Monitor

A= 8  
B= 10  
C= 2

## Exercise 2

Text



1 (Arduino Uno R3) ▼

```
1  int x= 100;
2  void setup()
3  {
4    Serial.begin(9600);
5    Serial.println(" x= 100 ");
6    float A = sin(x);
7    Serial.print(" sin(x)= ");
8    Serial.println(A);
9    float B = cos(x);
10   Serial.print(" cos(x)= ");
11   Serial.println(B);
12   float C = tan(x);
13   Serial.print(" tan(x)= ");
14   Serial.println(C);
15 }
16 void loop()
17 { }
18
```



Serial Monitor ▼

```
x= 100
sin(x)= -0.51
cos(x)= 0.86
tan(x)= -0.59
```

Send

Clear



### Exercise 3

Simulator time: 00:00:21

```
1 int sensor = 0;
2 int led = 13;
3 int sensorValue;
4 int x;
5
6 void setup() {
7   pinMode(led, OUTPUT);
8   Serial.begin(9600);
9 }
10
11 void loop() {
12   sensorValue = analogRead(sensor);
13   Serial.print("sensorValue ==> ");
14   Serial.println(sensorValue);
15
16   x = min(sensorValue, 200);
17
18   Serial.print("X ==> ");
19   Serial.println(x);
20
21   digitalWrite(led, HIGH);
22   delay(x);
23   digitalWrite(led, LOW);
24   delay(x);
25 }
```

Serial Monitor

```
sensorValue ==> 430
X ==> 200
sensorValue ==> 430
X ==> 200
sensorValue ==> 430
X ==> 200
sensorValue ==> 430
X ==> 200
```

### Exercise 4

Simulator time: 00:00:15

```
1 int sensor = 0;
2 int led = 13;
3 int sensorValue;
4 int x;
5
6 void setup() {
7   pinMode(led, OUTPUT);
8   Serial.begin(9600);
9 }
10
11 void loop() {
12   sensorValue = analogRead(sensor);
13   Serial.print("sensorValue ==> ");
14   Serial.println(sensorValue);
15
16   x = constrain(sensorValue, 100, 200);
17
18   Serial.print("X ==> ");
19   Serial.println(x);
20
21   digitalWrite(led, HIGH);
22   delay(x);
23   digitalWrite(led, LOW);
24   delay(x);
25 }
```

Serial Monitor

```
sensorValue ==> 20
X ==> 100
sensorValue ==> 20
X ==> 100
sensorValue ==> 20
X ==> 100
sensorValue ==> 20
X ==> 100
```

## Exercise 5

Simulator time: 00:00:02

Code Stop Simulation Export Share

Text

```
1 int pinR = 11;
2 int pinB = 10;
3 int pinG = 9;
4 void setup() {
5   pinMode(11, OUTPUT);
6   pinMode(10, OUTPUT);
7   pinMode(9, OUTPUT);
8   Serial.begin(9600);
9 }
10 void loop() {
11   int potenR = map(analogRead(A0), 0, 1023, 0, 255);
12   int potenB = map(analogRead(A1), 0, 1023, 0, 255);
13   int potenG = map(analogRead(A2), 0, 1023, 0, 255);
14   analogWrite(pinR, potenR);
15   analogWrite(pinB, potenB);
16   analogWrite(pinG, potenG);
17   delay(50);
18   Serial.print(" Red: ");
19   Serial.print(potenR);
20   Serial.print(" Blue: ");
21   Serial.print(potenB);
22   Serial.print(" Green: ");
23   Serial.println(potenG);
24   delay(100);
25 }
26
```

Serial Monitor

Red: 142 Blue: 193 Green: 219  
Red: 142 Blue: 193 Green: 219  
Red: 142 Blue: 193 Green: 219  
Red: 142 Blue: 193 Green: 219  
Red: 142 Blue: 193 Green: 219  
Red: 142 Blue: 193 Green: 219  
Red: 142 Blue: 193 Green: 219  
Red: 142 Blue: 193 Green: 219

Send Clear