#1: Study of Resistor Colour Codes

Problem Statement: Calculate the colour codes of given values of resistors in following chart.

Sr.	Resistor Value	1st Band	2nd Band	Multiplier Band
1.	10kΩ			
2.	330Ω			
3.	4.7kΩ			
4.	820kΩ			
5.	2.2MΩ			
6.	4.7Ω			
7.	1kΩ			
8.	470Ω			
9.	8.2kΩ			
10.	680kΩ			
11.	1MΩ			
12.	2.2kΩ			
13.	56kΩ			
14.	100kΩ			
15.	220Ω			
16.	3.3kΩ			
17.	5.6Ω			
18.	1Ω			
19.	82kΩ			
20.	10MΩ			

Problem Statement: Calculate the values of resistors from the following colour codes.

1. Green Blue Yellow –
2. Orange Orange Brown –
3. Yellow Violet Black –
4. Brown Green Golden –
5. Red Red Green –
6. Brown Red Orange –
7. White Brown Black –
8. Grey Red Red –
9. Blue Grey Orange –
10. Orange Orange Orange –
11. Blue Grey Golden –
12. Red Red Golden –
13. Yellow Violet Black –
14. Brown Black Golden –
15. Orange orange Green –
16. Grey Red Green –

#2: Study of Resistors Series & Parallel

Learn the theory first!

Definition of Resistors in Series: When same current flows through number of resistors, they are in series.

Explanation: When resistors are in series, their resistances add together.

Examples: Suppose there are two resistors R1 and R2 in series. Then their total resistance (R) will be –

$$R = R1 + R2$$

Suppose there are more number of resistors like R1, R2, R3, R4 ... then the total resistance will be –

$$R = R1 + R2 + R3 + R4 \dots$$

Definition of Resistors in Parallel: When same potential difference is produced across number of resistors, they are in parallel.

Explanation: When resistors are in parallel, the total resistance (R) is calculated using following formula.
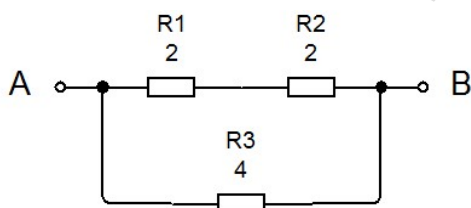
Examples: Suppose there are two resistors R1 and R2 in parallel. Then their total resistance will be –

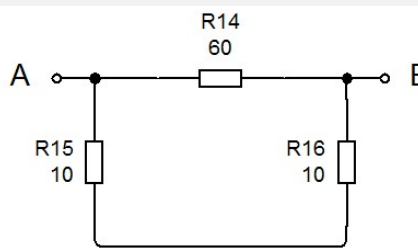$$R = \frac{R1 \times R2}{R1 + R2}$$

Suppose there are more number of resistors like R1, R2, R3, R4... then the total resistance will be –

$$\frac{1}{R} = \frac{1}{R1} + \frac{1}{R2} + \frac{1}{R3} + \frac{1}{R4} \dots$$

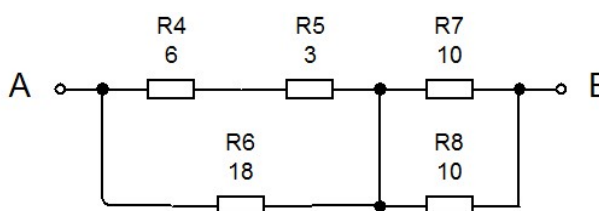## Problem Statement: Calculate total resistance across A-B, of each of the following circuits

Circuit #1

Circuit #2

Circuit #3

Circuit #4