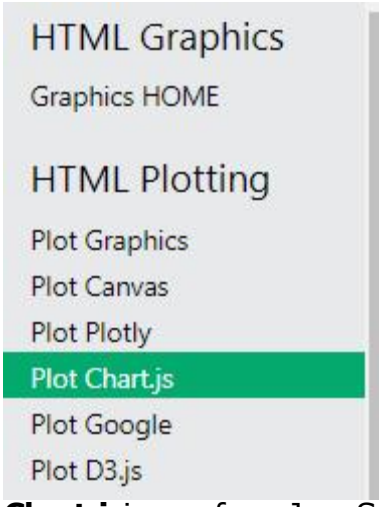


Chart.jsis an free JavaScript library for making HTML-based charts. It is one of the simplest visualization libraries for JavaScript, and comes with the many built-in chart types:

- Scatter Plot
- Line Chart
- Bar Chart
- Pie Chart
- Donut Chart
- Bubble Chart
- Area Chart
- Radar Chart
- Mixed Chart

Chart.js

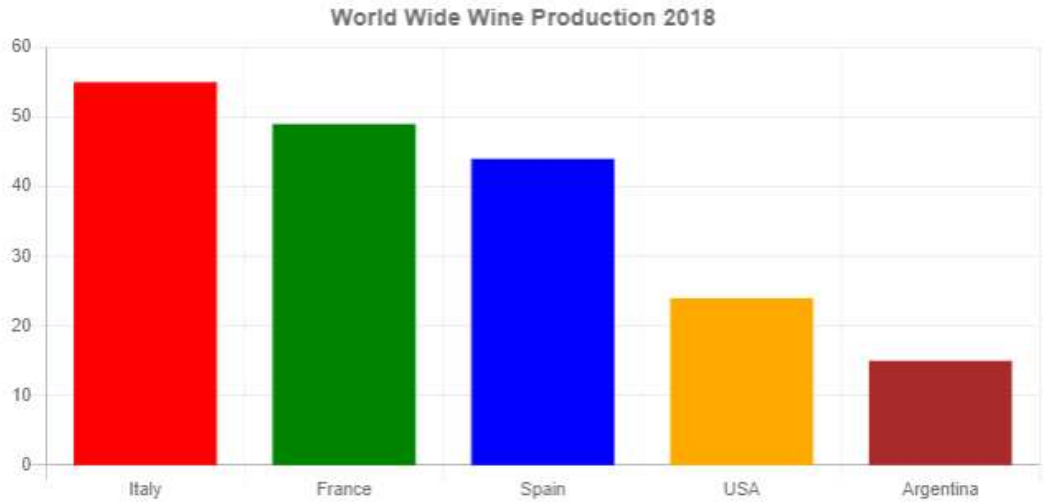
1.Add a link to the providing CDN (Content Delivery Network):

```
<script
src="https://cdnjs.cloudflare.com/ajax/libs/Chart.js/2.9.4/Chart.js">
</script>
```

2.Add a <canvas> to where in the HTML you want to draw the chart:

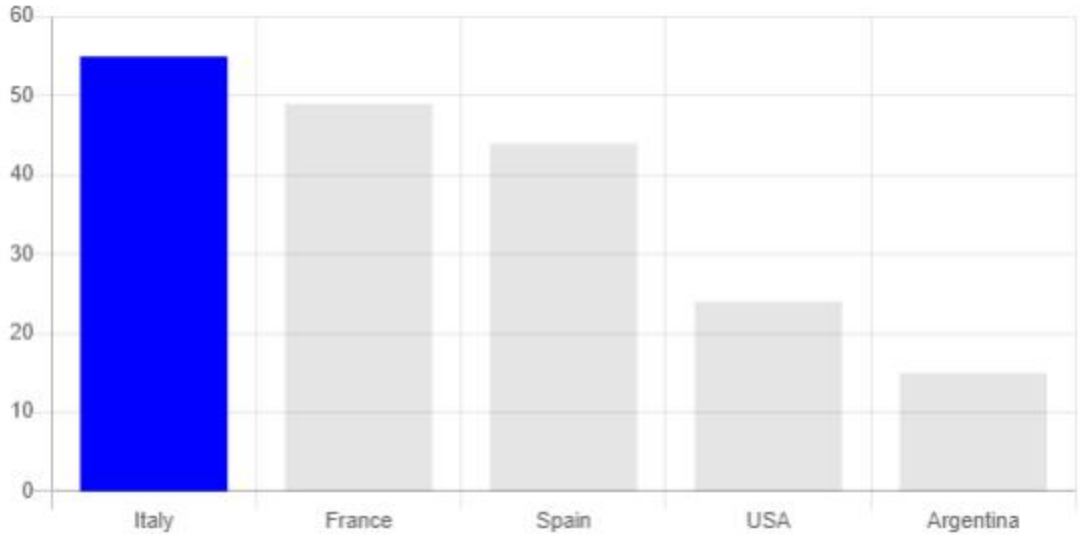
```
<canvasid="myChart"style="width:100%;max-width:700px"></canvas>
```

⇒ The canvas element must have a unique id.



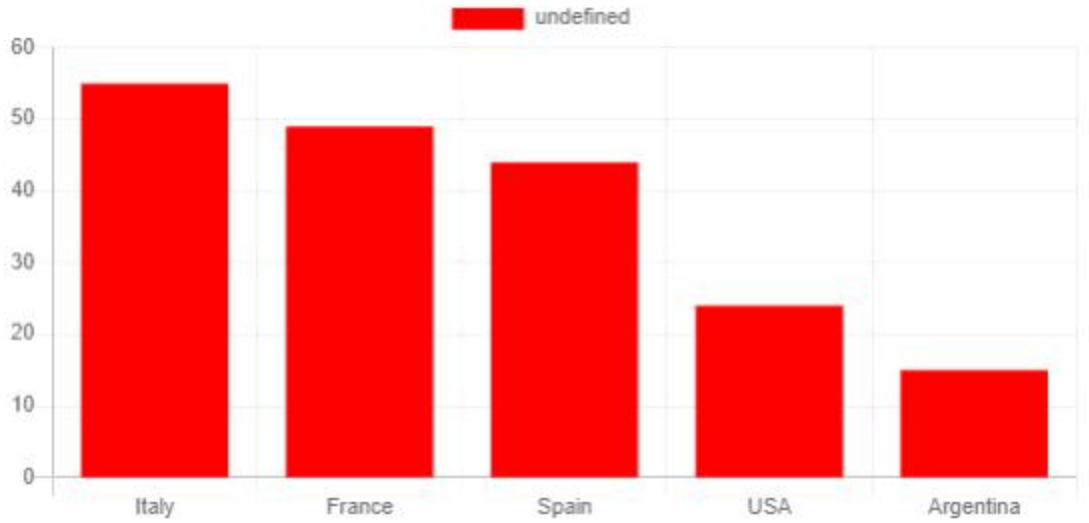

```
constmyChart =newChart("myChart", {
type:"bar",
data: {},
options: {}
});
```

```
const  xValues = ["Italy","France","Spain","USA","Argentina"];
const  yValues = [55,49,44,24,15];
const  barColors = ["red","green","blue","orange","brown"];

newChart("myChart", {
type:"bar",
data: {
labels: xValues,
datasets: [{
backgroundColor: barColors,
data: yValues
}]
},
options: {...}
});
```

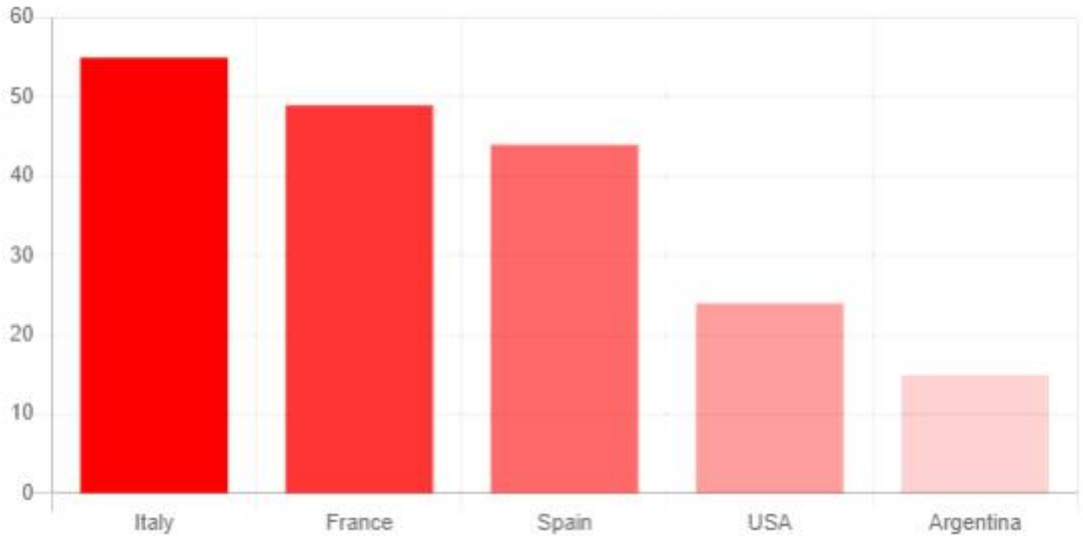



```
constmyChart =newChart("myChart", {
type:"bar",
data: {},
options: {}
});
```

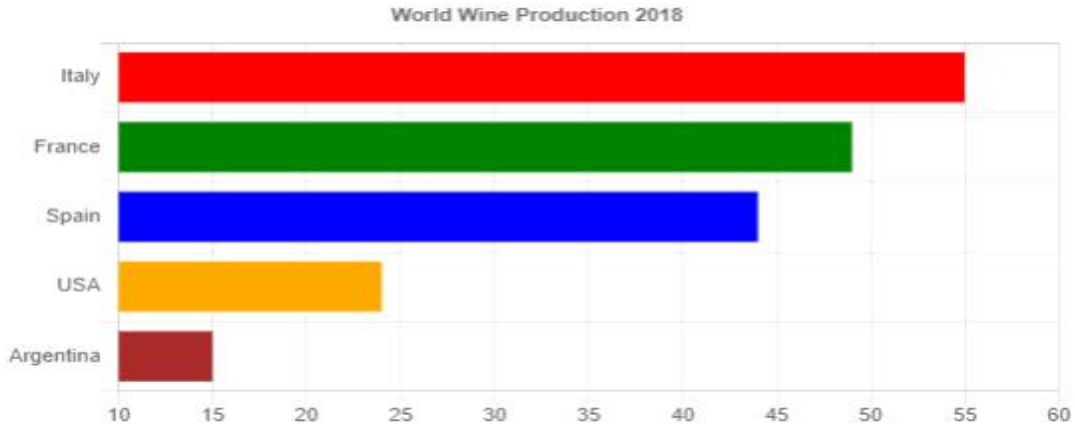
```
<script>
const xValues = ["Italy", "France", "Spain", "USA", "Argentina"];
const yValues = [55, 49, 44, 24, 15];
const barColors = ["blue"];

new Chart("myChart", {
  type: "bar",
  data: {
    labels: xValues,
    datasets: [{
      backgroundColor: barColors,
      data: yValues
    }]
  },
  options: {
    legend: {display: false},
    scales: {
      yAxes: [{
        ticks: {
          beginAtZero: true
        }
      }],
    }
  }
});
</script>
```



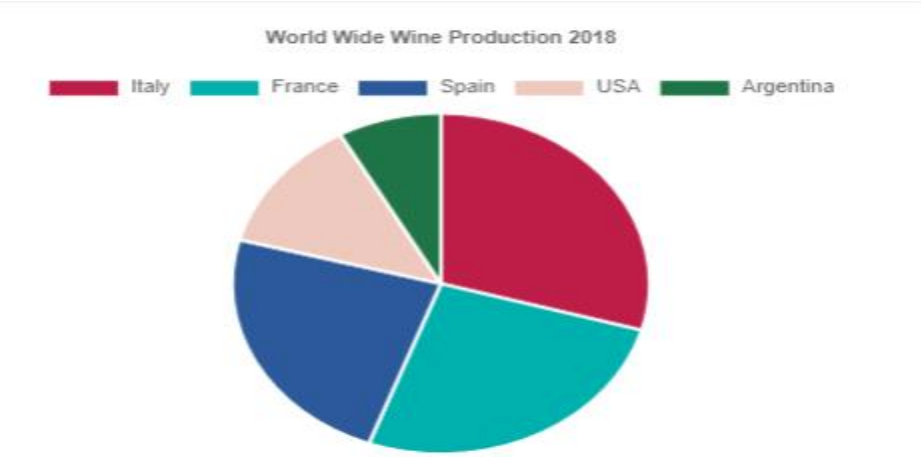

```
<!DOCTYPE html>
<html>
<script src="https://cdnjs.cloudflare.com/ajax/libs/Chart.js/2.9.4/Chart.js"></script>
<body>

<canvas id="myChart" style="width:100%;max-width:600px"></canvas>

<script>
const xValues = ["Italy", "France", "Spain", "USA", "Argentina"];
const yValues = [55, 49, 44, 24, 15];
let barColors = "red";

new Chart("myChart", {
  type: "bar",
  data: {
    labels: xValues,
    datasets: [{
      backgroundColor: barColors,
      data: yValues
    }]
  },
  options: {
    xlegend: {display: false},
    scales: {
      yAxes: [{
        ticks: {
          beginAtZero: true
        }
      }],
    }
  }
});
</script>

</body>
</html>
```




```
<!DOCTYPE html>
<html>
<script src="https://cdnjs.cloudflare.com/ajax/libs/Chart.js/2.9.4/Chart.js"></script>
<body>

<canvas id="myChart" style="width:100%;max-width:600px"></canvas>

<script>
const xValues = ["Italy", "France", "Spain", "USA", "Argentina"];
const yValues = [55, 49, 44, 24, 15];
const barColors = [
  "rgba(255,0,0,1.0)",
  "rgba(255,0,0,0.8)",
  "rgba(255,0,0,0.6)",
  "rgba(255,0,0,0.4)",
  "rgba(255,0,0,0.2)"
];

new Chart("myChart", {
  type: "bar",
  data: {
    labels: xValues,
    datasets: [{
      backgroundColor: barColors,
      data: yValues
    }]
  },
  options: {
    legend: {display: false},
    scales: {
      yAxes: [{
        ticks: {
          beginAtZero: true
        }
      }],
    }
  }
});
</script>

</body>
</html>
```

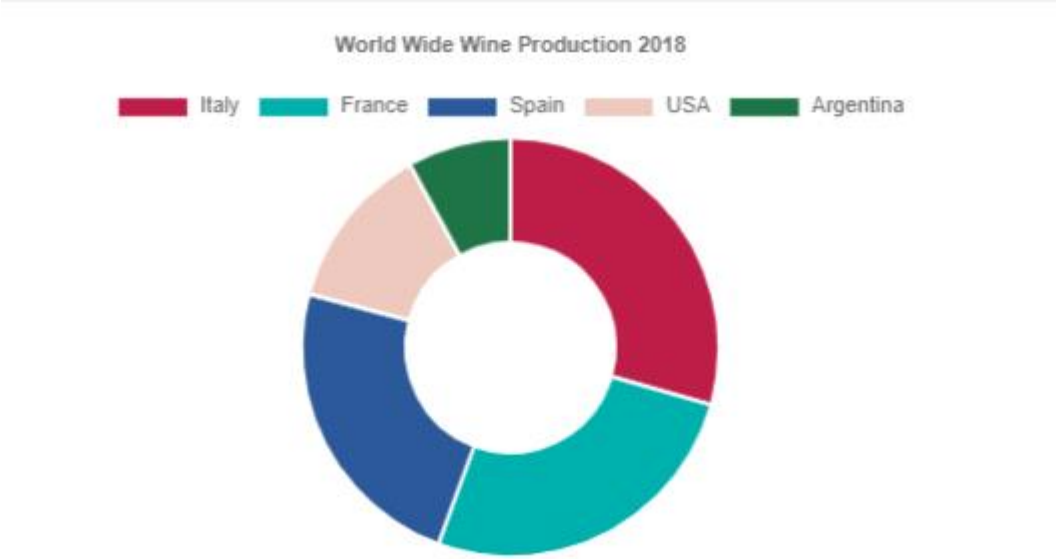



```
<!DOCTYPE html>
<html>
<script src="https://cdnjs.cloudflare.com/ajax/libs/Chart.js/2.9.4/Chart.js"></script>
<body>

<canvas id="myChart" style="width:100%;max-width:600px"></canvas>

<script>
var xValues = ["Italy", "France", "Spain", "USA", "Argentina"];
var yValues = [55, 49, 44, 24, 15];
var barColors = ["red", "green","blue","orange","brown"];

new Chart("myChart", {
  type: "horizontalBar",
  data: {
  labels: xValues,
  datasets: [{
    backgroundColor: barColors,
    data: yValues
  }]
},
  options: {
    legend: {display: false},
    title: {
      display: true,
      text: "World Wine Production 2018"
    },
    scales: {
      xAxes: [{ticks: {min: 10, max:60}}]
    }
  }
});
</script>

</body>
</html>
```



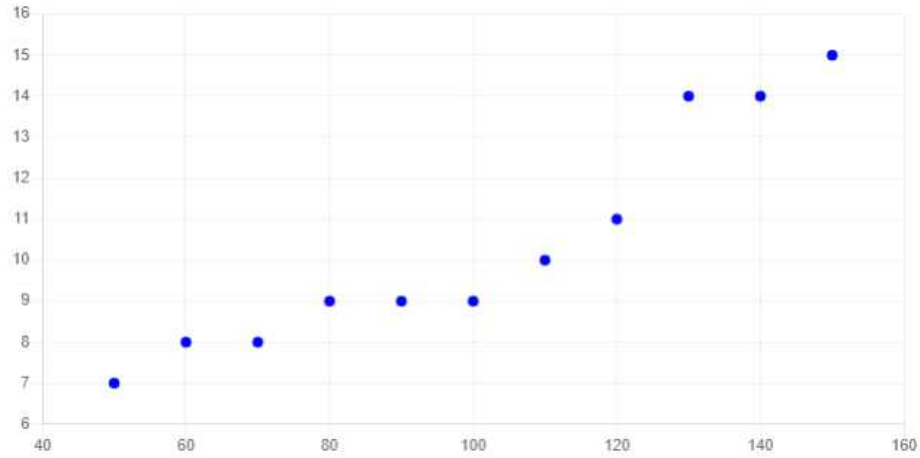

```
<!DOCTYPE html>
<html>
<script src="https://cdnjs.cloudflare.com/ajax/libs/Chart.js/2.9.4/Chart.js"></script>
<body>

<canvas id="myChart" style="width:100%;max-width:600px"></canvas>

<script>
const xValues = ["Italy", "France", "Spain", "USA", "Argentina"];
const yValues = [55, 49, 44, 24, 15];
const barColors = [
  "#b91d47",
  "#00aba9",
  "#2b5797",
  "#e8c3b9",
  "#1e7145"
];

new Chart("myChart", {
  type: "pie",
  data: {
    labels: xValues,
    datasets: [{
      backgroundColor: barColors,
      data: yValues
    }]
  },
  options: {
    title: {
      display: true,
      text: "World Wide Wine Production 2018"
    }
  }
});
</script>

</body>
</html>
```

```
new Chart("myChart", {
  type: "doughnut",
  data: {
    labels: xValues,
    datasets: [{
      backgroundColor: barColors,
      data: yValues
    }]
  },
  options: {
    title: {
      display: true,
      text: "World Wide Wine Production 2018"
    }
  }
});
```

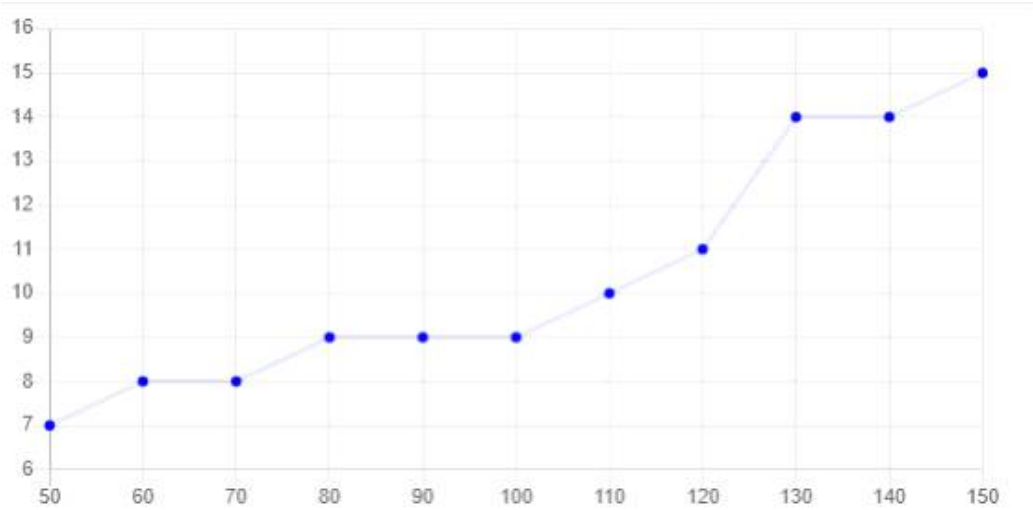


Scatter Plots

House Prices vs. Size

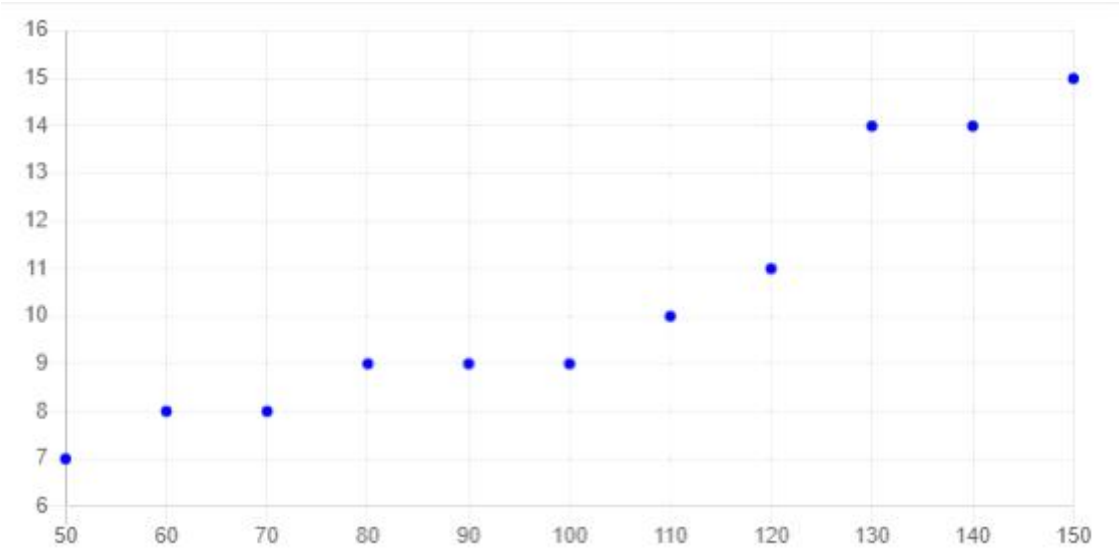


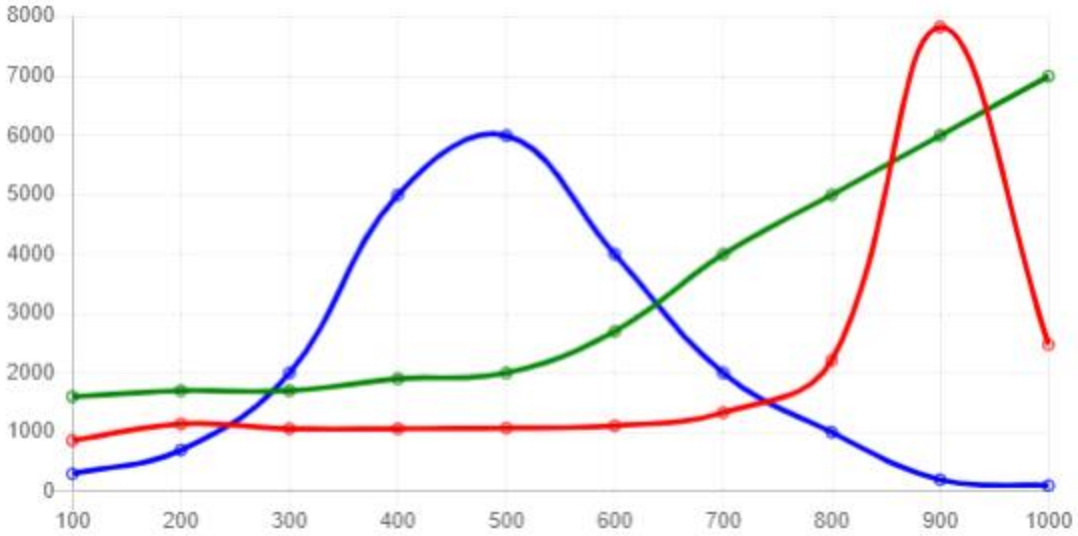

```
<script>
const xyValues = [
  {x:50, y:7},
  {x:60, y:8},
  {x:70, y:8},
  {x:80, y:9},
  {x:90, y:9},
  {x:100, y:9},
  {x:110, y:10},
  {x:120, y:11},
  {x:130, y:14},
  {x:140, y:14},
  {x:150, y:15}
];

new Chart("myChart", {
  type: "scatter",
  data: {
    datasets: [{
      pointRadius: 4,
      pointBackgroundColor: "rgb(0,0,255)",
      data: xyValues
    }]
  },
  options: {
    legend: {display: false},
    scales: {
      xAxes: [{ticks: {min: 40, max:160}}],
      yAxes: [{ticks: {min: 6, max:16}}],
    }
  }
});
</script>
```




```
<script>
const xValues = [50,60,70,80,90,100,110,120,130,140,150];
const yValues = [7,8,8,9,9,9,10,11,14,14,15];

new Chart("myChart", {
  type: "line",
  data: {
    labels: xValues,
    datasets: [{
      fill: false,
      lineTension: 0,
      backgroundColor: "rgba(0,0,255,1.0)",
      borderColor: "rgba(0,0,255,0.1)",
      data: yValues
    }]
  },
  options: {
    legend: {display: false},
    scales: {
      yAxes: [{ticks: {min: 6, max:16}}],
    }
  }
});
</script>
```

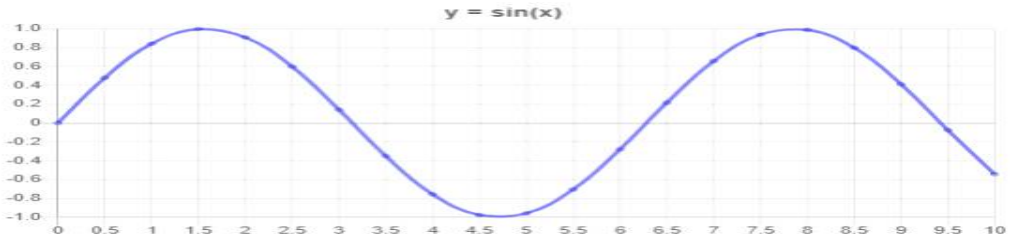
lineTension: 0,
backgroundColor: "rgba(0,0,255,1)",
borderColor: "rgba(0,0,0,0)",
data: yValues






```
<script>
const xValues = [100,200,300,400,500,600,700,800,900,1000];

new Chart("myChart", {
  type: "line",
  data: {
    labels: xValues,
    datasets: [{
      data: [860,1140,1060,1060,1070,1110,1330,2210,7830,2478],
      borderColor: "red",
      fill: false
    }, {
      data: [1600,1700,1700,1900,2000,2700,4000,5000,6000,7000],
      borderColor: "green",
      fill: false
    }, {
      data: [300,700,2000,5000,6000,4000,2000,1000,200,100],
      borderColor: "blue",
      fill: false
    }]
  },
  options: {
    legend: {display: false}
  }
});
</script>
```


```
<script>
const xValues = [];
const yValues = [];
generateData("x * 2 + 7", 0, 10, 0.5);

new Chart("myChart", {
  type: "line",
  data: {
    labels: xValues,
    datasets: [{
      fill: false,
      pointRadius: 1,
      borderColor: "rgba(255,0,0,0.5)",
      data: yValues
    }]
  },
  options: {
    legend: {display: false},
    title: {
      display: true,
      text: "y = x * 2 + 7",
      fontSize: 16
    }
  }
});
function generateData(value, i1, i2, step = 1) {
  for (let x = i1; x <= i2; x += step) {
    xValues.push(x);
    yValues.push(eval(value));
  }
}
</script>
```




```
<script>
const xValues = [];
const yValues = [];
generateData("Math.sin(x)", 0, 10, 0.5);

new Chart("myChart", {
  type: "line",
  data: {
    labels: xValues,
    datasets: [{
      fill: false,
      pointRadius: 2,
      borderColor: "rgba(0,0,255,0.5)",
      data: yValues
    }]
  },
  options: {
    legend: {display: false},
    title: {
      display: true,
      text: "y = sin(x)",
      fontSize: 16
    }
  }
});
function generateData(value, i1, i2, step = 1) {
  for (let x = i1; x <= i2; x += step) {
    yValues.push(eval(value));
    xValues.push(x);
  }
}
</script>
```