P6

PRÁCTICA-OTRAS REPRESENTACIONES EN EL PLANO

▼ Ejercicio Propuesto P- 6.1

Utilizando el comando Table, generar los siguientes puntos : (-5,25), (-4,16), (-3,9), (-2,4), (-1,1), (0, 0), (1, 1), (2, 4), (3, 9), (4, 16), (5, 25). Dibujar los puntos y la gráfica que forman dichos puntos juntándolos

▼ Solución P- 6.1

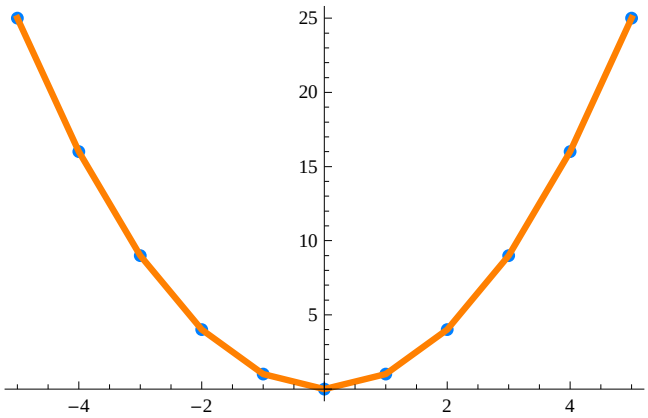
⋆ Generamos los puntos con Table

```
tabla = Table[{k, k^2}, {k, -5, 5, 1}]
```

```
{{-5, 25}, {-4, 16}, {-3, 9}, {-2, 4},
 {-1, 1}, {0, 0}, {1, 1}, {2, 4}, {3, 9}, {4, 16}, {5, 25}}
```

⋆ Dibujamos los puntos y la gráfica con los puntos unidos y las juntamos

```
g1 = ListPlot[tabla, PlotStyle → {PointSize[0.02], RGBColor[0, 0.5, 1]}];

g2 = ListPlot[tabla, Joined → True, PlotStyle → {Thickness[0.01], RGBColor[1, 0.5, 0]}];

Show[g1, g2]
```

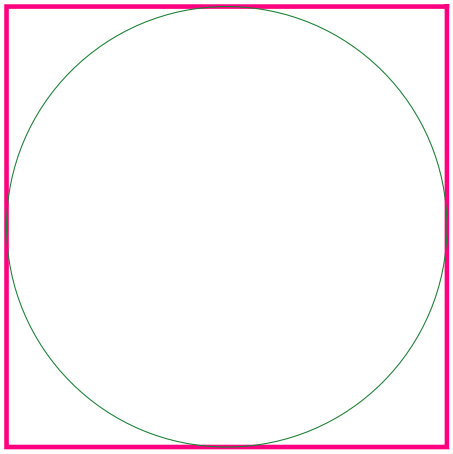


Ejercicio Propuesto P- 6.2

Dibujar el cuadrado de vertices: (3,3), (-3,3), (-3,-3) y (3, -3) y la circunferencia inscrita en él

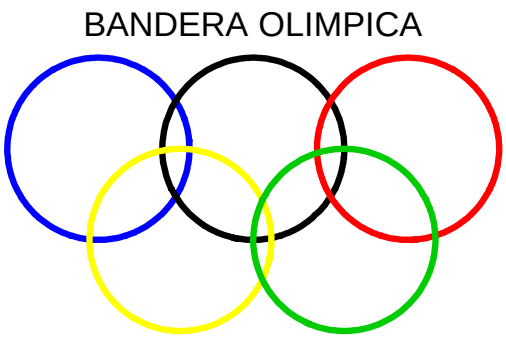
▼ Solución P- 6.2

```
puntos = {{3, 3}, {-3, 3}, {-3, -3}, {3, -3}, {3, 3}};

cuadrado = ListLinePlot[puntos, Joined -> True,
   PlotStyle -> {Thickness[0.01], RGBColor[1, 0, 0.5]}];

circulo = Graphics[{RGBColor[0.1, 0.5, 0.2], Circle[{0, 0}, 3]}];

Show[cuadrado, circulo, Axes → False, AspectRatio → Automatic]
```



▼ Ejercicio Propuesto P- 6.3

Escribe las instrucciones necesarias para obtener el siguiente gráfico:

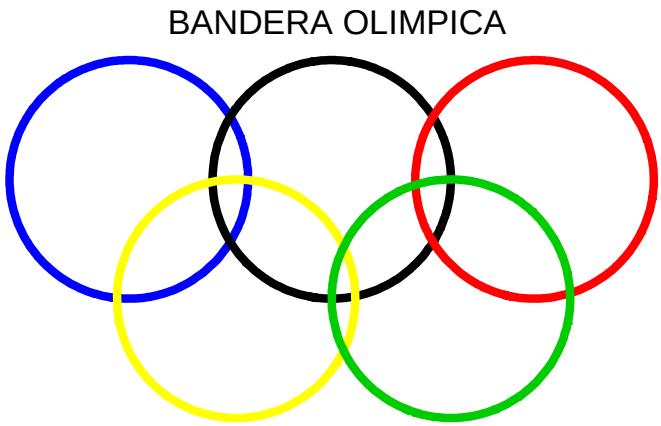


▼ Solución P- 6.3

```
circulo[x_, y_, r_, a_, b_] = (x - a)^2 + (y - b)^2 == r^2
```

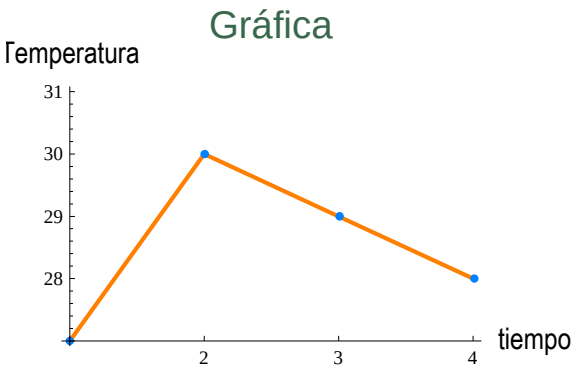
$$(-a+x)^2+(-b+y)^2 == r^2$$

```
ContourPlot[{-1 + (-1.1 + x)^2 + (-2 + y)^2 == 0, -1 + (-2.8 + x)^2 + (-2 + y)^2 == 0,
  -1 + (-4.5 + x)^2 + (-2 + y)^2 == 0, -1 + (-2. + x)^2 + (-1 + y)^2 == 0, -1 + (-3.8 + x)^2 + (-1 + y)^2 == 0},
 {x, 0, 5.7}, {y, -0.1, 3.1}, AspectRatio → Automatic, Frame → False,
 ContourStyle → {{Thickness[0.012], Blue}, {Black, Thickness[0.012]},
   {Red, Thickness[0.012`]}, {Yellow, Thickness[0.012]},
   {RGBColor[0, 0.8, 0], Thickness[0.012]}}, PlotLabel → "BANDERA OLIMPICA"]
```



▼ Ejercicio Propuesto P- 6.4

Escribe las instrucciones necesarias para obtener el siguiente gráfico:

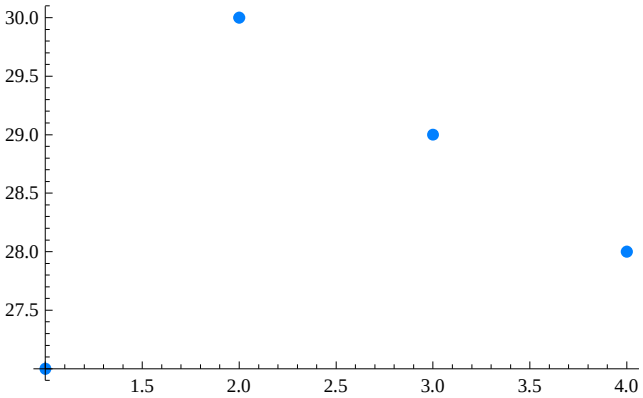


▼ Solución P- 6.4

```
puntos = {{1, 27}, {2, 30}, {3, 29}, {4, 28}};
```

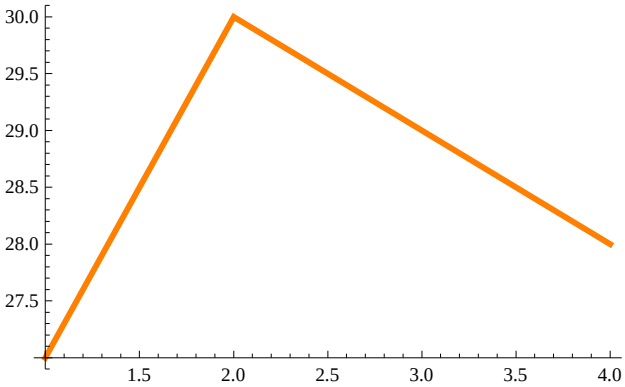
★ **Con: LisPlot[tabla, PlotStyle → *color*, PlotStyle → PointSize [*n*]] , dibujamos los puntos en el color y el grosor indicados**

```
g1 = ListPlot[puntos, PlotStyle → {PointSize[0.02], RGBColor[0, 0.5, 1]}]
```



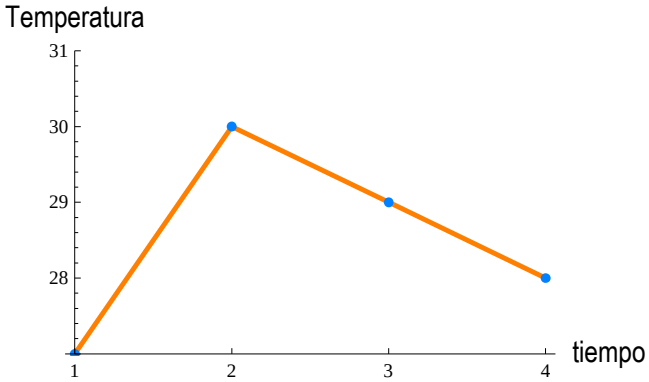
★ **Con: Joined → True y PlotStyle → {Thickness[*n*],RGBColor[1, 0.5, 0]},**

```
g2 = ListPlot[puntos, Joined → True, PlotStyle → {Thickness[0.01], RGBColor[1, 0.5, 0]}]
```



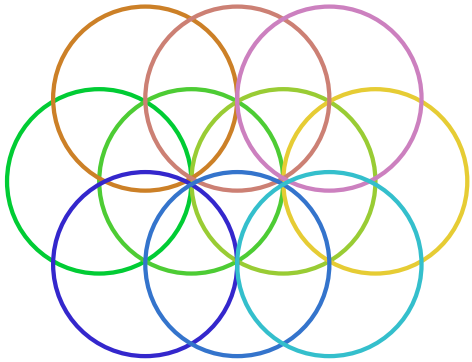
★ **AxesLabel → *nombre***

```
Show[g2, g1, PlotRange → {27, 31},
 AxesLabel → {"tiempo", "Temperatura"}, Ticks → {{1, 2, 3, 4}, Automatic}]
```



▼ Ejercicio Propuesto P- 6.5

Escribe las instrucciones necesarias para obtener el siguiente gráfico:

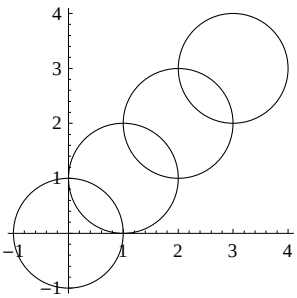


▼ Solución P- 6.5

```
circulos1 = Table[Circle[{a, a}, 1], {a, 0, 3, 1}]
```

```
{Circle[{0, 0}, 1], Circle[{1, 1}, 1], Circle[{2, 2}, 1], Circle[{3, 3}, 1]}
```

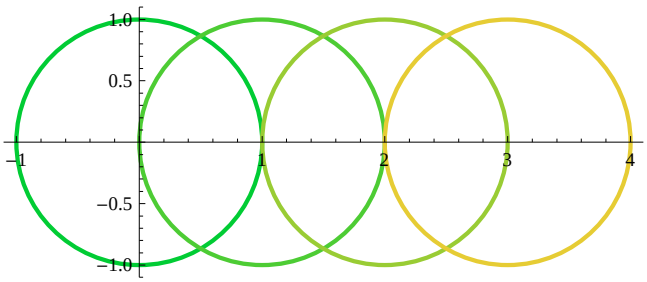
```
Graphics[circulos1, Axes → True]
```




```
circulos2 =
 Table[{Thickness[Large], RGBColor[a * 0.3, 0.8, 0.2], Circle[{a, 0}, 1]}, {a, 0, 3, 1}]
```

```
{{Thickness[Large], RGBColor[0, 0.8, 0.2], Circle[{0, 0}, 1]},
 {Thickness[Large], RGBColor[0.3, 0.8, 0.2], Circle[{1, 0}, 1]},
 {Thickness[Large], RGBColor[0.6, 0.8, 0.2], Circle[{2, 0}, 1]},
 {Thickness[Large], RGBColor[0.9, 0.8, 0.2], Circle[{3, 0}, 1]}}
```

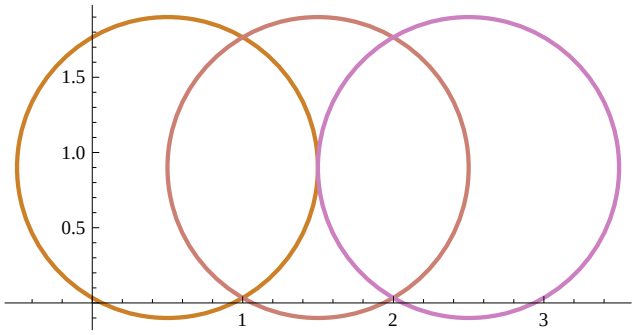
```
g2 = Graphics[circulos2, Axes → True]
```



```
circulos3 = Table[
  {Thickness[Large], RGBColor[0.8, 0.5, a * 0.3], Circle[{a, 0.9}, 1]}, {a, 0.5, 2.5, 1}]
```

```
{{Thickness[Large], RGBColor[0.8, 0.5, 0.15], Circle[{0.5, 0.9}, 1]},
 {Thickness[Large], RGBColor[0.8, 0.5, 0.45], Circle[{1.5, 0.9}, 1]},
 {Thickness[Large], RGBColor[0.8, 0.5, 0.75], Circle[{2.5, 0.9}, 1]}}
```

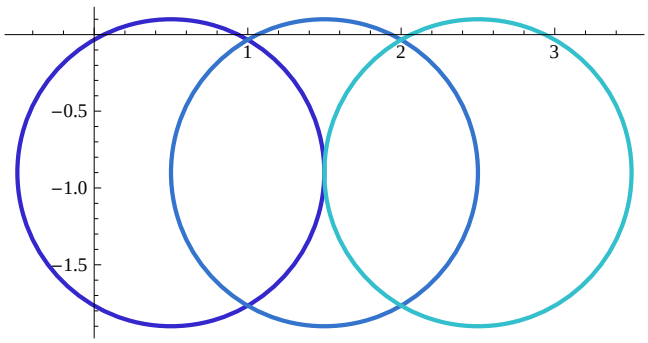
```
g3 = Graphics[circulos3, Axes → True]
```




```
circulos4 = Table[
  {Thickness[Large], RGBColor[0.2, a * 0.3, 0.8], Circle[{a, -0.9}, 1]}, {a, 0.5, 2.5, 1}]
```

```
{{Thickness[Large], RGBColor[0.2, 0.15, 0.8], Circle[{0.5, -0.9}, 1]},
 {Thickness[Large], RGBColor[0.2, 0.45, 0.8], Circle[{1.5, -0.9}, 1]},
 {Thickness[Large], RGBColor[0.2, 0.75, 0.8], Circle[{2.5, -0.9}, 1]}}
```

```
g4 = Graphics[circulos4, Axes → True]
```




```
Show[g2, g3, g4, Axes → False]
```