Activity: make a plot

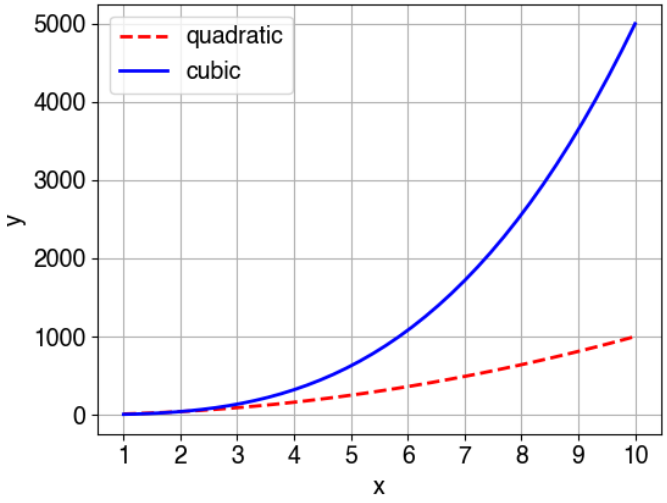
In a script called **A18-myplot.py**, plot these two polynomials on the same plot.

$y=a*x^2$
$y=b*x^3$

with a=10 and b=5

- Generate the data.
  The x values are in range [1,10]. Generate 40 values in the range [1,10].
  Generate the y values for each polynomial.

- Use rcParams to set the font size to 14 and font name to Helvetica
- Create one Figure and Axes Object, and set the figure size to (5,3)
- Plot the data
  Note: the two plots have different colors and line styles. The linewidth is 2
  Show the legend.
  Show the grid
  Label the axis.
  Set the x ticks from 1 to 10 in step of 1
  Show the plot



Activity: subplots and loops

Make script called **A18-sub.py** and in it do the following:

Q1. Make 3 subplots in column and in each of them plot the function sin(x), where x goes from 0 to 2*pi

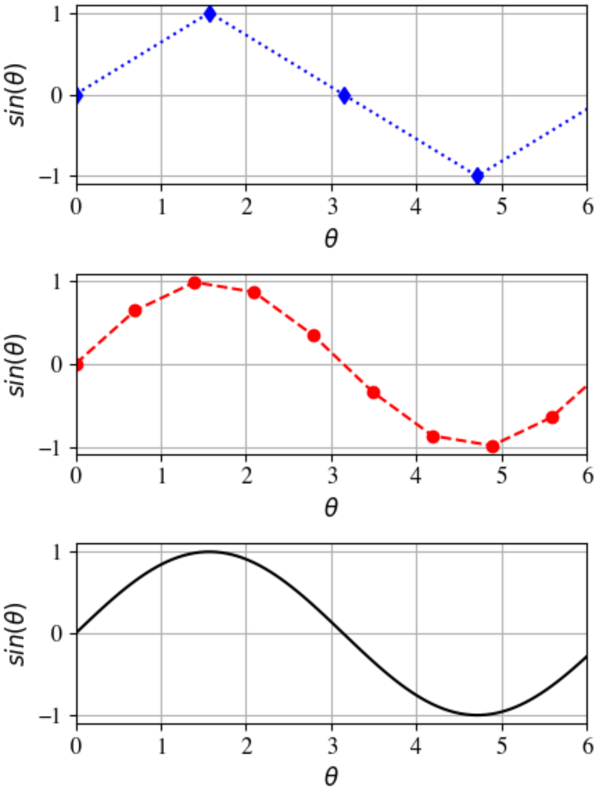
$y = \sin(x),\ x \in [0,2\pi]$

Generate n points for the x values in range $[0,2\pi]$

- In first subplot, the n points should be 5
- In second subplot, the n points should be 10
- In third subplot, increase further the number of points, like 100

Notice that subplots have different line styles, colors and markers.

- Set the fotsize to 12 and font name to Times or Arial, and the height of the padding between subplots to 0.5 with rcParams.
- Set the figure size (5,8)
- Label the axis.
- Set the x axis limit [0,6]
- Show the grid



Q2. Generate the same 3 subplots, but now use a for loop over the Axes.

Optional - make a custom line plot function

In a script **A18-funcplot.py** make a custom line plot function called **my_function_plot** that uses the **plot method** and returns a customized plot.
The function takes these parameters: one Axes (ax), one 1D array for x values, 1D array for the y values, a format string (for the line and color), a string for the x label, and a string for the x label, and returns the customized Axes (ax).

- Call the function to make a line plot of the sin() function
- Call again the function to make a line plot of the cos() function

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Submit to A18:
        A18-myplot.py
        A18-sub.py Q1 and Q2
        A18-funcplot.py - optional
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