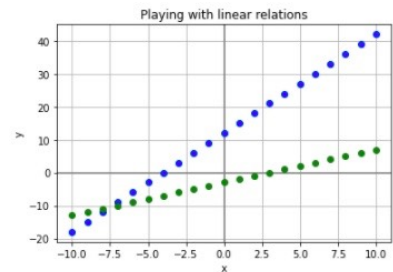


LINEAR RELATIONS + PYTHON: TEAM TASK

The Python code shown below plots 2 linear relations, y_1 & y_2 , as shown on the right.

The code is available at: <https://colab.research.google.com/drive/1CPXgmUuG2sz4GOkUXc8izM2hm73dqjBr?usp=sharing>



1. Execute, edit and re-execute, and study the code and its output to understand how it works.
2. Alter the code to plot a 3rd relation which is:
 - A. The sum of y_1 and y_2
 - B. The difference of y_1 and y_2
 - C. The product of y_1 and y_2
 - D. The quotient of y_1 and y_2
3. For each of the above:
 - A. Alter parameters to understand the characteristics and meaning of y_3
 - B. Add organized notes in the text cell above the code to illustrate, through examples, the characteristics and meaning of y_3

```
# Playing with linear relations

import matplotlib.pyplot as plt

# define lists
xList = []
y1List = []
y2List = []

# set values for m & b
m1 = 3
b1 = 12
m2 = 1
b2 = -3

# calculate and store x, y1 & y2 values in lists
for x in range (-10,11):
    y1 = m1*x + b1
    y2 = m2*x + b2
    xList.append(x)
    y1List.append(y1)
    y2List.append(y2)

# label graph
plt.title('Playing with linear relations')
plt.xlabel('x')
plt.ylabel('y')

# draw axes
plt.axhline(0, color='gray')
plt.axvline(0, color='gray')
plt.grid(True)

# plot graphs
plt.plot(xList, y1List, 'bo')
plt.plot(xList, y2List, 'go')
```

HOW TO WORK AS A TEAM

1. A **non-competitive** atmosphere among team members and among teams
2. A **common purpose** within and across teams
3. **Collaborative** problem-solving, where everyone contributes
4. **Scaffolding** by the teacher as needed
5. **Everyone develops understanding**, with no team members left behind
6. **Exchange of ideas among teams**, with opportunities for cross-team visits
7. **Multiple solution methods**, modelling/solving problems in more than one way
8. **A culminating sharing** of what teams did, learned, and wonder about