1.

Compute the length of $\mathbf{x} = \begin{bmatrix} 1 \\ -1 \\ 3 \end{bmatrix}$ using the dot product. Do the exercises

using pen and paper.

1 / 1 punto

○ $\sqrt{13}$

○ 11

○ $\sqrt{5}$

◉ $\sqrt{11}$

○ $\sqrt{3}$

○ 3

✓ **Correcto**
Well done!

2.

Compute the angle (in rad) between $\mathbf{x} = \begin{bmatrix} 3 \\ 4 \end{bmatrix}$ and $\mathbf{y} = \begin{bmatrix} -1 \\ -1 \end{bmatrix}$ using the dot

product.

1 / 1 punto

> 2.99

✓ **Correcto**
Good job!

3.

Compute the distance between $\mathbf{x} = \begin{bmatrix} 3 \\ 4 \end{bmatrix}$ and $\mathbf{y} = \begin{bmatrix} 1 \\ -1 \end{bmatrix}$. Do the exercises

using pen and paper. Enter your answer as a decimal number (calculator
is fine to get it).

1 / 1 punto

> 5.39

✓ **Correcto**

4. Write a piece of code that computes the length of a given vector x.

1 / 1 punto

```
1   import numpy as np
2
3   def length(x):
4       """Compute the length of a vector"""
5       length_x = np.sqrt(np.sum(x**2)) # <--- compute the length of a vector x here
6
7       return length_x
8
9   print(length(np.array([1,0])))
```

Ejecutar

Restablecer

✓ **Correcto**

> Good job!

5. We are given two vectors

$$\mathbf{x} = \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}, \quad \mathbf{y} = \begin{bmatrix} -1 \\ 0 \\ 8 \end{bmatrix}$$

1 / 1 punto

Compute the angle (in rad) between $\mathbf{x}$ and $\mathbf{x} - \mathbf{y}$.

Do the exercises using pen and paper, but you will need a calculator at some point.

> 2.0

✓ **Correcto**