Congratulations! You passed!

Grade received 80% **To pass** 80% or higher

Go to next item

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 point**

- (•) $\sqrt{11}$
- ( ) $\sqrt{13}$
- ( ) $\sqrt{5}$
- ( ) $\sqrt{3}$
- ( ) 3
- ( ) 11

Correct
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. **0 / 1 point**

-0.99

Incorrect
You probably made a mistake, try again!

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 point**

5.38

Correct

4. Write a piece of code that computes the length of a given vector x. **1 / 1 point**

```python
import numpy as np

def length(x):
  """Compute the length of a vector"""
  length_x = np.dot(x,x) ** 0.5

  return length_x

print(length(np.array([1,0])))
```

Run
Reset

Correct
Good job!

5. We are given two vectors **1 / 1 point**

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

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

Correct