Your grade: 100%

Your latest: **100%** • Your highest: **100%** • To pass you need at least 80%. We keep your highest score.

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

- ○ 3
- ○ $\sqrt{3}$
- ◉ $\sqrt{11}$
- ○ $\sqrt{13}$
- ○ $\sqrt{5}$
- ○ 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. 1 / 1 point

2.98

Correct
Good job!

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

3.60

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.sqrt(np.sum(x**2))

  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.

2.00

Correct