Congratulations! You passed!

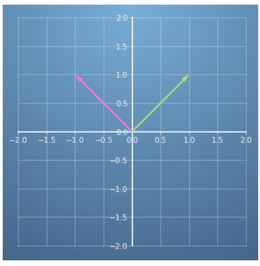
Grade received 100%

Latest Submission Grade 100%

To pass 80% or higher

Go to next item

1. 1 / 1 point



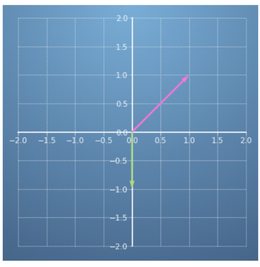
Compute the angle between $\mathbf{x} = \begin{bmatrix} 1 \\ 1 \end{bmatrix}$ and $\mathbf{y} = \begin{bmatrix} -1 \\ 1 \end{bmatrix}$ using the inner product defined by

$$\langle \mathbf{x}, \mathbf{y} \rangle = \mathbf{x}^T \begin{bmatrix} 2 & -1 \\ -1 & 4 \end{bmatrix} \mathbf{y}$$

- 1.57 rad (90°)
- 1.2 rad (69°)
- 0.35 rad (20°)

Correct
Absolutely right!

2. 1 / 1 point



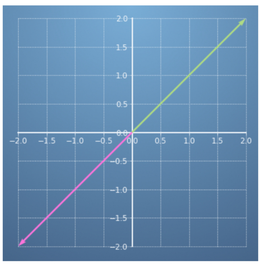
Compute the angle between $\mathbf{x} = \begin{bmatrix} 0 \\ -1 \end{bmatrix}$ and $\mathbf{y} = \begin{bmatrix} 1 \\ 1 \end{bmatrix}$ using the inner product defined by

$$\langle \mathbf{x}, \mathbf{y} \rangle = \mathbf{x}^T \begin{bmatrix} 1 & -\frac{1}{2} \\ -\frac{1}{2} & 5 \end{bmatrix} \mathbf{y}$$

- 2.69 rad (154°)
- -0.9 rad (-52°)
- 2.35 rad (135°)

Correct
Well done!

3. 1 / 1 point



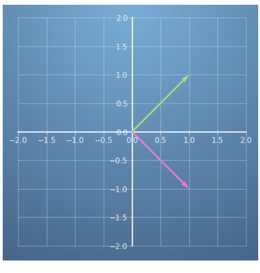
Compute the angle between $\mathbf{x} = \begin{bmatrix} 2 \\ 2 \end{bmatrix}$ and $\mathbf{y} = \begin{bmatrix} -2 \\ -2 \end{bmatrix}$ using the inner product defined by

$$\langle \mathbf{x}, \mathbf{y} \rangle = \mathbf{x}^T \begin{bmatrix} 2 & 1 \\ 1 & 4 \end{bmatrix} \mathbf{y}$$

- 0 rad (0°)
- 3.14 rad (180°)

Correct
Well done: $\pi \approx 3.14$ is the right answer.

4. 1 / 1 point



Compute the angle between $\mathbf{x} = \begin{bmatrix} 1 \\ 1 \end{bmatrix}$ and $\mathbf{y} = \begin{bmatrix} 1 \\ -1 \end{bmatrix}$ using the inner product defined by

$$\langle \mathbf{x}, \mathbf{y} \rangle = \mathbf{x}^T \begin{bmatrix} 1 & 0 \\ 0 & 5 \end{bmatrix} \mathbf{y}$$

- 2.3 rad (131°)
- -1.57 rad (-90°)
- -2.3 rad (-131°)
- 1.57 rad (90°)

Correct
Good job.

5. 1 / 1 point

Compute the angle between $\mathbf{x} = \begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix}$ and $\mathbf{y} = \begin{bmatrix} 2 \\ -1 \\ 0 \end{bmatrix}$ using the inner product defined by

$$\langle \mathbf{x}, \mathbf{y} \rangle = \mathbf{x}^T \begin{bmatrix} 1 & 0 & 0 \\ 0 & 2 & -1 \\ 0 & -1 & 3 \end{bmatrix} \mathbf{y}$$

- 1.37 rad (78°)
- 0.2 rad (11°)
- 1.31 rad (75°)

Correct
Well done!