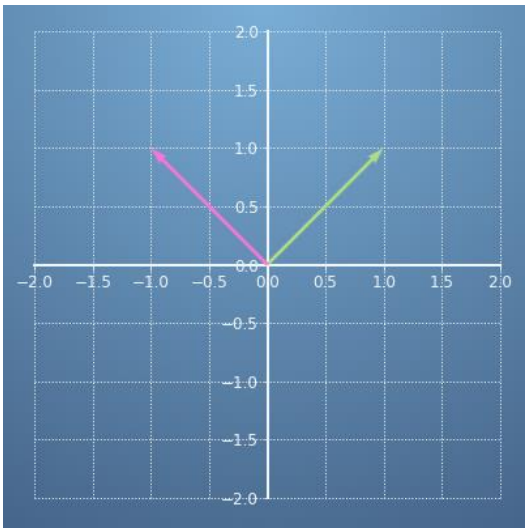
Angles between vectors using a non-standard inner product

1.Question 1



Compute the angle between

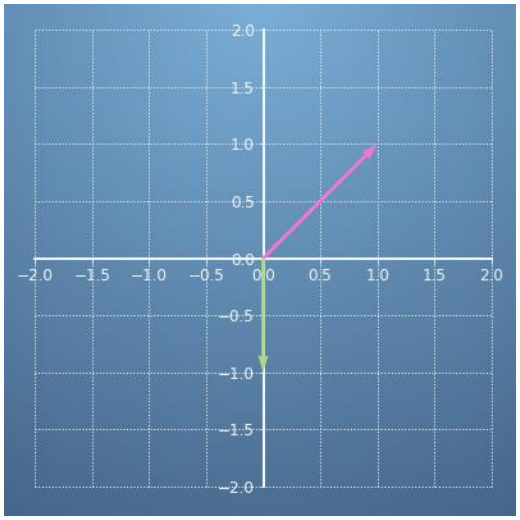
$x=[1\ 1]$ and $y=[-1\ 1]$ using the inner product defined by

$\langle x,y\rangle = x^{T}[2\ -1], [-1\ 4]y$

1 / 1 point

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

2.Question 2



Compute the angle between

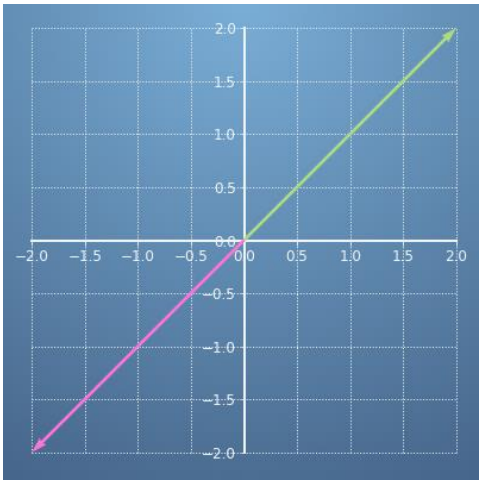
$x=[0\ -1]$ and $y=[1\ 1]$ using the inner product defined by

$\langle x,y\rangle = x^T[1\ -1/2],\ [-1/2\ \ 5]y$

1 / 1 point

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

3.Question 3



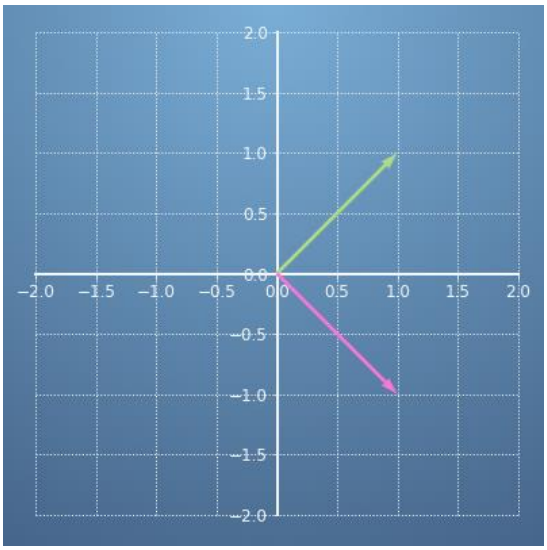
Compute the angle between $x=[2\ 2]$ and $y=[-2\ -2]$ using the inner product defined by

$\langle x,y\rangle = x^T[2\ 1],\ [1\ 4]y$

1 / 1 point

- 3.14 rad (180◦)
- 0 rad (0 ◦)

4.Question 4



Compute the angle between

$x=[1\ 1]$ and $y=[1\ -1]$ using the inner product defined by

$\langle x,y\rangle = x^{T}[1\ 0], [0\ 5]y$

1 / 1 point

- -2.3 rad (-131^\circ−131∘)
- -1.57 rad (-90^\circ−90∘)
- 2.3 rad (131^\circ131∘)
- 1.57 rad (90^\circ90∘)

5.Question 5
Compute the angle between

$x=[1\ 1\ 1]$ and $y=[2\ -1\ 0]$ using the inner product defined by

$\langle x,y\rangle = x^{T}[1\ 0\ 0], [0\ 2\ -1], [0\ -1\ 3]y$

1 / 1 point

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