

EE381 HW 4

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Updated: February 25, 2020

3.5

All work done in Python. For vector notation, I use $[a, b, c]$ instead of $\hat{x}a + \hat{y}b + \hat{z}c$.

(a)

$$|A| = 3.742, \hat{\mathbf{a}} = [0.267, 0.535, -0.802]$$

(b)

$$\text{comp}_C B = -1.789$$

(c)

$$\theta_{AC} = 85.5^\circ$$

(d)

$$\mathbf{A} \times \mathbf{C} = [-2, 4, 2]$$

(e)

$$\mathbf{A} \cdot (\mathbf{B} \times \mathbf{C}) = 20$$

(f)

$$\mathbf{A} \times (\mathbf{B} \times \mathbf{C}) = [32, -52, -24]$$

(g)

$$\hat{\mathbf{x}} \times \mathbf{B} = [0, 0, -4]$$

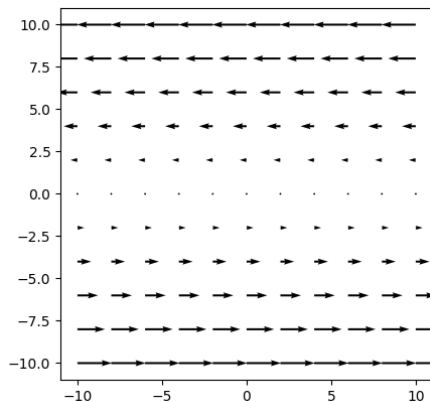
(h)

$$(\mathbf{A} \times \hat{\mathbf{y}}) \cdot \hat{\mathbf{z}} = 1$$

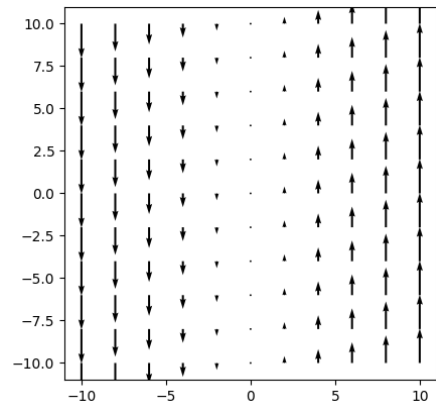
3.14

3.20

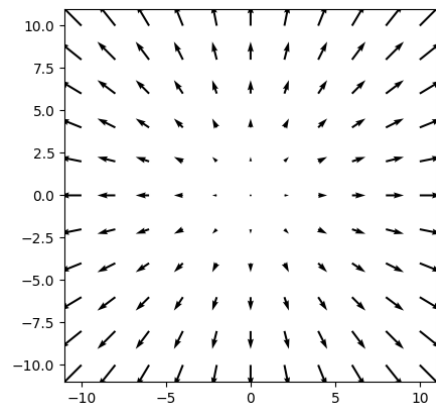
(a)



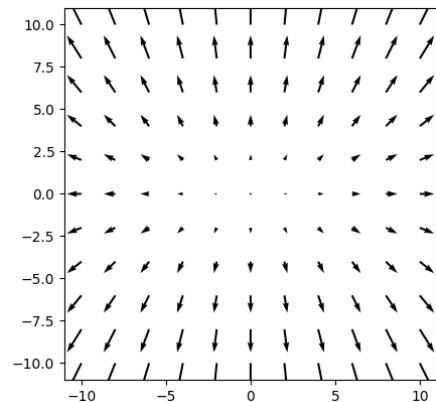
(b)



(c)



(d)



3.25
3.26
3.40
3.44
3.48
3.50