Arfaz Hossain **p110-202201**
Assignment Assignment1-Vectors due 01/21/2022 at 11:59pm PST

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1. (1 point)
Student Name: Arfaz Hossain
Student ID: V00984826
One vector is given as $\vec{A} = 3.75\hat{i} - 2.79\hat{j} + 3.93\hat{k}$.
A second vector is given as $\vec{B} = 1.86\hat{i} + 5.07\hat{j} + 1.46\hat{k}$.
(The input below will accept answers with no more than 1
What is the angle between $\vec{A}$ and $\vec{B}$?
_____ degrees
UVic Problem ID: 47291611324924130
Student Name: Arfaz Hossain
Student ID: V00984826
Correct Answers:

- 92.403

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2. (1 point)
Student Name: Arfaz Hossain
Student ID: V00984826
One vector is given as $\vec{A} = 2.59\hat{i} + 1.85\hat{j} - 2.99\hat{k}$.
A second vector is given as $\vec{B} = 4.13\hat{i} + 3.23\hat{j} + 2.24\hat{k}$.
(The input below will accept answers with no more than 1
What is the magnitude of $\vec{A} \times \vec{B}$?
_____
What is the angle between $\vec{A} \times \vec{B}$ and the positive z-axis?
_____ degrees
UVic Problem ID: 47291611324924130
Student Name: Arfaz Hossain
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Correct Answers:

- 22.813
- 88.178

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3. (1 point)
Student Name: Arfaz Hossain
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Two vectors, $\vec{A}$ and $\vec{B}$ are as follows:
$\vec{A} = 5.65\hat{i} - 3.94\hat{j} + 2.27\hat{k}$
$\vec{B} = -1.33\hat{i} + 2.31\hat{j} + 1.62\hat{k}$
A third vector $\vec{C} = \vec{A} - \alpha\vec{B}$ where α is a constant.
(The input below will accept answers with no more than 1
Suppose that $\vec{C} \cdot \hat{i} = 0$.
What is the y-component of $\vec{C}$?
_____
UVic Problem ID: 47291611324924130
Student Name: Arfaz Hossain
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Correct Answers:

- 5.873

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4. (1 point)
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Particle A is at $\vec{r}_A = 7.57\text{m}\hat{i} - 1.63\text{m}\hat{j}$.
Particle B is at $\vec{r}_B = 1.15\text{m}\hat{i} + 4.13\text{m}\hat{j}$.
(The input below will accept answers with no more than 1
What is the magnitude of the vector from A to B?
_____ m
What angle does the vector from A to B make with the positive x-axis?
_____ degrees
UVic Problem ID: 47291611324924130
Student Name: Arfaz Hossain
Student ID: V00984826
Correct Answers:

- 8.625
- 138.102