ⓘ Students have either already taken or started taking this quiz, so take care when editing it. If you change any quiz questions in a significant way, you might want to consider re-grading students' quizzes who took the old version of the quiz.

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Details Questions

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Group 1

Group Name Pick 8 questions, 10 pts per question Pick ☐ questions, ☐ pts per question

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Question 1 pts

if vector **a** and vector **b** are the vectors forming consecutive sides of a rectangle ABCD, then the vector representing the side CD is:

a. $\vec{a}$
b. $\vec{b}$
c. $-\vec{b}$
d. None of the above

- c
- a
- b
- d

Question 1 pts

Given a vector $\vec{a}$ =(2,3,1) what is the vector with unit magnitude and the same direction as $\vec{a}$?

- $\left(\frac{2}{\sqrt{14}}, \frac{3}{\sqrt{14}}, \frac{1}{\sqrt{14}}\right)$
- $\left(\frac{2}{\sqrt{6}}, \frac{3}{\sqrt{6}}, \frac{1}{\sqrt{6}}\right)$
- (2,3,1)
- None of the given

Question 1 pts

What is the scalar product between two vectors $\vec{a} = 5\hat{i} - \hat{j} - 3\hat{k}$ and $\vec{b} = 2\hat{i} - 3\hat{j} + 2\hat{k}$?

- 7
- 9
- 10
- 14

Question 1 pts

Given the vectors $\vec{a} = (5, -1, -3)$ and $\vec{b} = (1, 3, -5)$, What is the angle in radian in between the vectors $(\vec{a} + \vec{b})$ and $(\vec{a} - \vec{b})$?

- $\frac{\pi}{2}$
- 0
- $\frac{\pi}{4}$
- $\frac{\pi}{6}$

Question 1 pts

If two vectors $5\vec{a} + k\vec{b}$ and $8\vec{a} + 2\vec{b}$ are parallel then find the value of k?

- 5/4
- 5/9
- 5/8
- none of the given

Question 1 pts

Given two vectors $\vec{a}$ and $\vec{b}$, what is the projection of $\vec{a}$ on $\vec{b}$?

- $\frac{\vec{a}.\vec{b}}{|\vec{b}|}$
- $\frac{\vec{a}.\vec{b}}{|\vec{a}|}$
- $\frac{\vec{b}}{|\vec{a}.\vec{b}|}$
- None of the given

Question 1 pts

If θ is the angle between two vectors $\vec{a}$ and $\vec{b}$, if $\vec{a}.\vec{b} = 0$ then what is the value of θ?

- $\frac{\pi}{2}$
- $\frac{\pi}{4}$
- 0
- None of the above

Question 1 pts

The projection of vector $\vec{a} = 3\hat{i} + 2\hat{j} + \hat{k}$ on vector $\vec{b} = 2\hat{i} - 3\hat{j} + \hat{k}$ is

- $\frac{1}{14}$
- 14

- $\frac{1}{7}$
- -14

Question 1 pts

The displacement vector of the particle when it has traveled from point P(2,3,5) to Q(3,4,5) will be?

- $\vec{i}+\vec{j}$
- $\vec{i}+\vec{j}+5\vec{k}$
- $\vec{i}+\vec{j}-\overrightarrow{5k}$
- None of the given

Question 1 pts

A(2,-1,1) B(1,-3,-5) and C(3,-4,-4) are the vertices of triangle ABC, Which of the following is the correct length of the side?

- $\left|\overrightarrow{AB}\right|=\sqrt{41},\left|\overrightarrow{BC}\right|=\sqrt{6},\left|\overrightarrow{CA}\right|=\sqrt{35}$
- $\left|\overrightarrow{AB}\right|=\sqrt{31},\left|\overrightarrow{BC}\right|=\sqrt{6},\left|\overrightarrow{CA}\right|=\sqrt{35}$
- $\left|\overrightarrow{AB}\right|=\sqrt{41},\left|\overrightarrow{BC}\right|=\sqrt{6},\left|\overrightarrow{CA}\right|=\sqrt{33}$
- $\left|\overrightarrow{AB}\right|=\sqrt{41},\left|\overrightarrow{BC}\right|=\sqrt{9},\left|\overrightarrow{CA}\right|=\sqrt{35}$

Question 1 pts

Given two vectors $\vec{a}$ and $\vec{b}$, which of the following inequalities are true?

- [ ] $\left|\vec{a}+\vec{b}\right| \leq |\vec{a}| + \left|\vec{b}\right|$
- [ ] $\left|\vec{a}.\vec{b}\right| \leq |\vec{a}|\,\left|\vec{b}\right|$
- [ ] $\left|\vec{a}.\vec{b}\right| \geq |\vec{a}|\,\left|\vec{b}\right|$
- [ ] $\left|\vec{a}+\vec{b}\right| \geq |\vec{a}| + \left|\vec{b}\right|$

Group 2

Group Name | Pick 1 questions, 20 pts per question | Pick □ questions, □ pts per question

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Question 1 pts

Given the points A(2,-1,1), B(1,-3,-5), and C(3,-4,-4), then which of the following options are correct?

- ABC are the vertices of a right-angled triangle
- ABC are the vertices of a isosceles triangle triangle
- ABC are the vertices of an equilateral triangle
- None of the given answers is correct

Question 1 pts

The area of a triangle whose vertices are A(1,1,1), B(1,2,3), C(2,3,1) is?

- $\frac{1}{2}\sqrt{21}$

- $\sqrt{21}$
- $\frac{1}{2}\sqrt{9}$
- $\frac{1}{2}\sqrt{13}$

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