Due: Tue Apr 5 2016 11:00 PM PDT

Question | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15

1. Question Details SCalcET7 12.3.003. [1765888]

Find $\mathbf{a} \cdot \mathbf{b}$.

$\mathbf{a} = \left\langle -2, \frac{1}{2} \right\rangle, \quad \mathbf{b} = \langle -4, 4 \rangle$

2. Question Details SCalcET7 12.3.006. [1815578]

Find $\mathbf{a} \cdot \mathbf{b}$.

$\mathbf{a} = \langle p, -p, 6p \rangle, \quad \mathbf{b} = \langle 3q, q, -q \rangle$

3. Question Details SCalcET7 12.3.007. [1815590]

Find $\mathbf{a} \cdot \mathbf{b}$.

$\mathbf{a} = 9\mathbf{i} + \mathbf{j}, \quad \mathbf{b} = \mathbf{i} - 8\mathbf{j} + \mathbf{k}$

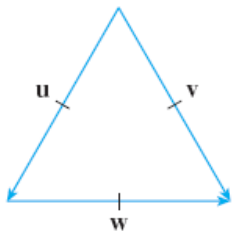
4. Question Details SCalcET7 12.3.009. [1836432]

Find $\mathbf{a} \cdot \mathbf{b}$.

$|\mathbf{a}| = 2, \quad |\mathbf{b}| = 9,$ the angle between $\mathbf{a}$ and $\mathbf{b}$ is $2\pi/3$

5. Question Details SCalcET7 12.3.011. [1853612]

If $\mathbf{u}$ is a unit vector, find $\mathbf{u} \cdot \mathbf{v}$ and $\mathbf{u} \cdot \mathbf{w}$. (Assume $\mathbf{v}$ and $\mathbf{w}$ are also unit vectors.)



$\mathbf{u} \cdot \mathbf{v} =$

$\mathbf{u} \cdot \mathbf{w} =$

6. Question Details SCalcET7 12.3.017. [1766031]

Find the angle between the vectors. (First find an exact expression and then approximate to the nearest degree.)

$\mathbf{a} = \langle 5, -1, 6 \rangle, \quad \mathbf{b} = \langle -2, 4, 3 \rangle$

exact

approximate °

7. Question Details SCalcET7 12.3.020. [1766027]

Find the angle between the vectors. (First find an exact expression and then approximate to the nearest degree.)

$\mathbf{a} = \mathbf{i} + 2\mathbf{j} - 2\mathbf{k}, \quad \mathbf{b} = 4\mathbf{i} - 3\mathbf{k}$

exact

approximate °

8. Question Details SCalcET7 12.3.022. [1815523]

Find, correct to the nearest degree, the three angles of the triangle with the given vertices.

$A(1, 0, -1), \quad B(4, -4, 0), \quad C(1, 3, 2)$

$\angle CAB =$ °

$\angle ABC =$ °

$\angle BCA =$ °

9. Question Details SCalcET7 12.3.024. [1765900]

Determine whether the given vectors are orthogonal, parallel, or neither.

(a) $\mathbf{u} = \langle -9, 6, 6 \rangle, \quad \mathbf{v} = \langle 12, -8, -8 \rangle$

- orthogonal
- parallel
- neither

(b) $\mathbf{u} = \mathbf{i} - \mathbf{j} + 4\mathbf{k}, \quad \mathbf{v} = 4\mathbf{i} - \mathbf{j} + \mathbf{k}$

- orthogonal
- parallel
- neither

(c) $\mathbf{u} = \langle a, b, c \rangle, \quad \mathbf{v} = \langle -b, a, 0 \rangle$

- orthogonal
- parallel
- neither

10. Question Details SCalcET7 12.3.025. [1765893]

Use vectors to decide whether the triangle with vertices $P(2, -2, -2)$, $Q(3, 1, -4)$, and $R(7, -1, -5)$ is right-angled.

- ○ Yes, it is right-angled.
- ○ No, it is not right-angled.

11. Question Details SCalcET7 12.3.027. [1765890]

Find a unit vector that is orthogonal to both $\mathbf{i} + \mathbf{j}$ and $\mathbf{i} + \mathbf{k}$.

12. Question Details SCalcET7 12.3.031. [1815471]

Find the acute angles between the curves at their points of intersection. (The angle between two curves is the angle between their tangent lines at the point of intersection. Give your answers in degrees, rounding to one decimal place. Enter your answers as a comma-separated list.)

$y = 4x^2, \quad y = 4x^3$

°

13. Question Details SCalcET7 12.3.042. [1785496]

Find the scalar and vector projections of **b** onto **a**.

$\mathbf{a} = \langle -2, 3, 6 \rangle, \quad \mathbf{b} = \langle 4, -1, 4 \rangle$

$\text{comp}_{\mathbf{a}}\mathbf{b} =$

$\text{proj}_{\mathbf{a}}\mathbf{b} =$

14. Question Details SCalcET7 12.3.043. [1785414]

Find the scalar and vector projections of **b** onto **a**.

$\mathbf{a} = 2\mathbf{i} - \mathbf{j} + 6\mathbf{k}, \quad \mathbf{b} = \mathbf{j} + \frac{1}{2}\mathbf{k}$

$\text{comp}_{\mathbf{a}}\mathbf{b} =$

$\text{proj}_{\mathbf{a}}\mathbf{b} =$

15. Question Details SCalcET7 12.3.047. [1785487]

If $\mathbf{a} = \langle 2, 0, -1 \rangle$, find a vector **b** such that $\text{comp}_{\mathbf{a}}\mathbf{b} = 2$.

$\mathbf{b} =$

Assignment Details