

Due: Tue Apr 7 2015 11:00 PM PDT

Question

1 2 3 4 5 6 7 8 9 10 11 12 13

1. Question Details

SCalcET7 12.3.003. [1765888]

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

$$\mathbf{a} = \left\langle -2, \frac{1}{4} \right\rangle, \quad \mathbf{b} = \langle -4, 8 \rangle$$

2. Question Details

SCalcET7 12.3.006. [1815578]

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

$$\mathbf{a} = \langle p, -p, 6p \rangle, \quad \mathbf{b} = \langle 5q, q, -q \rangle$$

3. Question Details

SCalcET7 12.3.007. [1815590]

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

$$\mathbf{a} = 9\mathbf{i} + \mathbf{j}, \quad \mathbf{b} = \mathbf{i} - 4\mathbf{j} + \mathbf{k}$$

4. Question Details

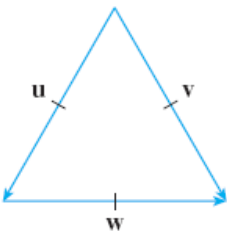
SCalcET7 12.3.009. [1836432]

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

$$|\mathbf{a}| = 2, \quad |\mathbf{b}| = 5, \quad \text{the angle between } \mathbf{a} \text{ and } \mathbf{b} \text{ is } 2\pi/3$$

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.)

$$\mathbf{u} \cdot \mathbf{v} = \text{[input box]}$$

$$\mathbf{u} \cdot \mathbf{w} = \text{[input box]}$$

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.)

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

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 12.3.024. [1765900]

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

(a) $\mathbf{u} = \langle -9, 3, 6 \rangle, \quad \mathbf{v} = \langle 12, -4, -8 \rangle$

 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

9. Question Details

SCalcET7 12.3.025. [1765893]

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

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

10. Question Details

SCalcET7 12.3.027. [1765890]

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

11. 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.)

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

◦

12. Question Details

SCalcET7 12.3.042. [1785496]

Find the scalar and vector projections of \mathbf{b} onto \mathbf{a} .

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

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

13. Question Details

SCalcET7 12.3.043. [1785414]

Find the scalar and vector projections of \mathbf{b} onto \mathbf{a} .

$$\mathbf{a} = 3\mathbf{i} - \mathbf{j} + 6\mathbf{k}, \quad \mathbf{b} = \mathbf{j} + \frac{1}{2}\mathbf{k}$$

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

Assignment Details