SM223 – Calculus III 20 August ‹βη

Consider the vectors:

$\mathbf{A} = \langle 2, 1, 0 \rangle = 2\mathbf{i} + 1\mathbf{j} + 0\mathbf{k}$

$\mathbf{B} = \langle -1, 4, 2 \rangle = -1\mathbf{i} + 4\mathbf{j} + 2\mathbf{k}$

$\mathbf{C} = \langle 2, 0, 1 \rangle = 2\mathbf{i} + 0\mathbf{j} + 1\mathbf{k}$

Calculate (if possible):

1. $\mathbf{A} + \mathbf{B}$

2. $\mathbf{A} - \mathbf{C}$

3. $|\mathbf{A}|$

4. $\mathbf{A} \cdot \mathbf{B}$

5. $\mathbf{B} \cdot \mathbf{C}$

6. $\mathbf{B} \times \mathbf{C}$

7. A unit vector in the direction of **A**.

8. $\text{comp}_{\mathbf{A}}\mathbf{B}$

9. $\mathbf{A}/\mathbf{B}$ that is vector **A** divided by vector **B**

10. The size of the angle between vectors **A** and **C** in degrees.