Answer on Question #56011 – Math – Vector Calculus

Question

If $A = 3i - j - 4k, B = -2i + 4j - 3k, C = i + 2j - k$, find $|A + B + C|$.

Solution

$A + B + C = 3i - j - 4k - 2i + 4j - 3k + i + 2j - k = (3 - 2 + 1)i + (-1 + 4 + 2)j + (-4 - 3 - 1)k = 2i + 5j - 8k.$

Then $|A + B + C| = \sqrt{2^2 + 5^2 + (-8)^2} = \sqrt{4 + 25 + 64} = \sqrt{93}.$

Answer: $\sqrt{93}.$