Vectors Formula

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Vectors Formula

Here are some of the main formulas associated with vectors:

Vector addition: v + w = (v1 + w1)i + (v2 + w2)j + (v3 + w3)k Scalar multiplication: kv = k(v1)i + k(v2)j + k(v3)k Dot product: v • w = (v1w1) + (v2w2) + (v3w3) Cross product: v x w = (v2w3 - v3w2)i + (v3w1 • v1w3)j + (v1w2 - v2w1)k where v and w are vectors, and v1, v2, and v3,

and w1, w2, and w3 are the components of the vectors in the x, y, and z directions, respectively. These formulas provide a way to manipulate vectors using mathematical operations, and are an important part of vector algebra and vector calculus.