

Chapter 11: Direction

Lesson

11.1

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1. The first part of the chapter is about the direction of a vector. A vector is a quantity that has both a magnitude and a direction. For example, a velocity vector has a magnitude (speed) and a direction (the direction of motion). A displacement vector has a magnitude (distance) and a direction (the direction of travel).

2. The second part of the chapter is about the addition of vectors. There are two main methods for adding vectors: the triangle rule and the parallelogram rule. The triangle rule involves placing the vectors end-to-end and then drawing a third vector from the start of the first to the end of the second. The parallelogram rule involves placing the vectors side-by-side and then drawing a parallelogram with the vectors as sides.

3. The third part of the chapter is about the subtraction of vectors. This is done by adding the negative of the vector being subtracted. For example, to subtract vector $\mathbf{b}$ from vector $\mathbf{a}$, you add vector $-\mathbf{b}$ to vector $\mathbf{a}$. The negative of a vector is a vector with the same magnitude but the opposite direction.

4. The fourth part of the chapter is about the scalar multiplication of vectors. A scalar is a real number. Multiplying a vector by a scalar results in a new vector that has the same direction as the original vector but a different magnitude. If the scalar is positive, the magnitude is increased. If the scalar is negative, the magnitude is decreased and the direction is reversed.

5. The fifth part of the chapter is about the dot product of two vectors. The dot product is a scalar that is calculated by multiplying the magnitudes of the two vectors and the cosine of the angle between them. It is used to find the angle between two vectors and to find the projection of one vector onto another.

Cartas al director [artículo] Beliver Imilán Alvarez.

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