# Vector Operations Quiz PDF

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**Discuss the significance of the cross product in physics.**

**Explain the process of resolving a vector into its components.**

**Why is understanding vector operations important in computer graphics?**

**What is a vector?**

◯ A quantity with only magnitude

- ◯ A quantity with only direction
- ◯ A quantity with both magnitude and direction
- ◯ A point in space

**What is the magnitude of a unit vector?**

- ◯ 0
- ◯ 1
- ◯ 2
- ◯ It varies

**Which property does vector addition satisfy?**

- ◯ Non-commutative
- ◯ Communtative
- ◯ Non-associative
- ◯ Distributative

**In which space is the cross product applicable?**

- ◯ One-dimensional
- ◯ Two-dimensional
- ◯ Three-dimensional
- ◯ Four-dimensional

**In which fields are vector operations commonly used? (Select all that apply)**

- ☐ Physics
- ☐ Computer Graphics
- ☐ Literature
- ☐ Engineering

**Describe a real-world scenario where vector subtraction might be used.**

**What is the result of the dot product of two perpendicular vectors?**

- ◯ Zero
- ◯ One
- ◯ Negative
- ◯ Positive

**Which of the following represents the projection of vector A onto vector B?**

- ◯ A + B
- ◯ A - B
- ◯ (A· B) B/I BI^2
- ◯ A × B

**Which operations can be performed on vectors? (Select all that apply)**

- ☐ Addition
- ☐ Subtraction
- ☐ Multiplication by a scalar
- ☐ Division by a vector

**What are the components of a vector in 3D space? (Select all that apply)**

- ☐ x-component
- ☐ y-component
- ☐ z-component
- ☐ w-component

**Which of the following are true about the dot product? (Select all that apply)**

- ☐ It results in a scalar
- ☐ It results in a vector
- ☐ It measures the angle between two vectors

- [ ] It is zero for perpendicular vectors

**How can you determine the direction of a vector given its components?**

**Which of the following are properties of vector addition? (Select all that apply)**

- [ ] Communtative
- [ ] Associative
- [ ] Distributative over scalar multiplication
- [ ] Non-associative

**Which operation results in a vector that is perpendicular to the plane of two vectors?**

- ◯ Dot Product
- ◯ Cross Product
- ◯ Scalar Multiplication
- ◯ Vector Addition

**What is the result of a vector multiplied by a scalar?**

- ◯ A scalar
- ◯ A vector with the same direction
- ◯ A vector with a different direction
- ◯ A zero vector

**Explain how vector addition is performed using the head-to-tail method.**

**Which statements are true about unit vectors? (Select all that apply)**

- [ ] They have a magnitude of one
- [ ] They indicate direction
- [ ] They can be any length
- [ ] They are used to scale other vectors