



Key Answers:

1. **Negative of a vector:** The negative of a vector has the same magnitude as the original vector but points in the opposite direction. It is represented as $-\vec{a}$.
2. **Parallel vectors:** Two vectors are parallel if they have the same or exactly opposite direction. For example, $\vec{A} \parallel \vec{B}$.
3. **Coplanar vectors:** Vectors that lie in the same plane or are parallel to the same plane are called coplanar vectors.
4. **Displacement vector formula:** The displacement vector is given by $\vec{r}_{12} = \vec{r}_2 - \vec{r}_1$, where \vec{r}_2 and \vec{r}_1 are position vectors.
5. **Parallelogram law of vector addition:** If two vectors act simultaneously at a point, the resultant is represented by the diagonal of a parallelogram formed by the two vectors as adjacent sides.
6. **Magnitude of resultant vector:** $R = \sqrt{A^2 + B^2 + 2AB \cos \theta}$, where A and B are magnitudes, and θ is the angle between them.
7. **Direction of resultant vector:** The angle α made by the resultant with vector \vec{A} is given by $\tan \alpha = \frac{B \sin \theta}{A + B \cos \theta}$.
8. **Triangle law of vector addition:** If two vectors are represented by two sides of a triangle taken in order, their resultant is given by the closing side of the triangle taken in the opposite direction.
9. **Anti-parallel vectors:** Two vectors are anti-parallel if they have the same magnitude but opposite directions, represented as $\vec{A} = -\vec{B}$.
10. **Triangle law resultant representation:** The resultant is represented by the third side of the triangle when the two vectors are placed head-to-tail in sequence.