AI Response:

Kinematics is a branch of classical mechanics that describes the motion of objec

Here are some key concepts in kinematics:

1. **Displacement (\(s\))**: The change in position of an object. It is a vector qua

2. **Velocity (\(v\))**: The rate of change of displacement with respect to time. It

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v = \frac{\Delta s}{\Delta t}
$$

3. **Acceleration (\(a\))**: The rate of change of velocity with respect to time. It c

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a = \frac{\Delta v}{\Delta t}
$$

4. **Equations of Motion**: For uniformly accelerated motion, there are three key

1. $v = u + at$
2. $s = ut + \frac{1}{2}at^2$
3. $v^2 = u^2 + 2as$

where:
- u = initial velocity
- v = final velocity
- a = acceleration
- s = displacement
- t = time

5. **Projectile Motion**: The motion of an object thrown into the air, subject to the

6. **Circular Motion**: The motion of an object traveling along a circular path. Ke

Kinematics is fundamental in physics and engineering for analyzing the motion o