

Kinematics Flow Chart

Question 1: What kind of motion is it?

Constant Velocity

Accelerated

Question 2: Is time involved?

$$\bar{V} = \frac{x_f - x_o}{t_f - t_o} \text{ (slope)}$$

or

$$\bar{V} = \frac{\Delta x}{\Delta t}$$

Yes

No

Question 3: Is displacement involved?

$$v_f^2 - v_o^2 = 2a \Delta x$$

Constant
Acceleration

No

Yes

$$\bar{a} = \frac{v_f - v_o}{t_f - t_o} \text{ (slope)}$$

or

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

$$\Delta x_{\text{total}} = v_o \Delta t_{\text{total}} + \frac{1}{2} a \Delta t_{\text{total}}^2$$

Constant Acceleration