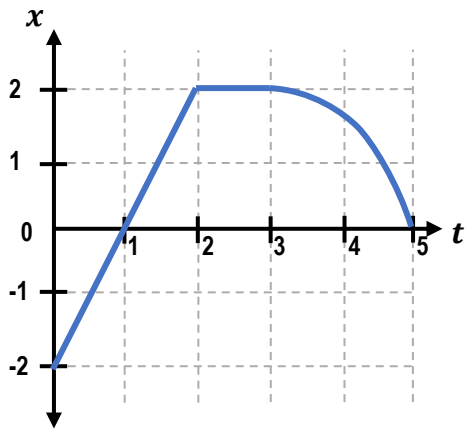
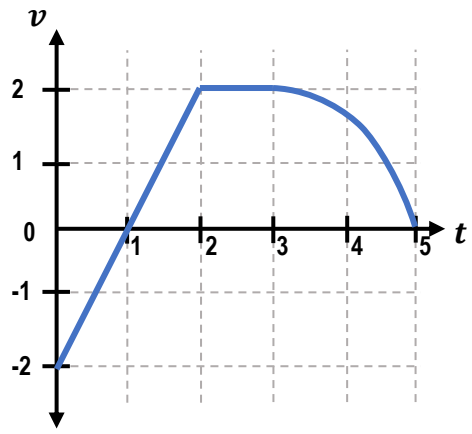
CONCEPT: VELOCITY-TIME GRAPHS & ACCELERATION

Position-Time Graphs



- Y-axis shows **POSITION**, x-axis shows TIME
- $v = \frac{\Delta \vec{x}}{\Delta t} \rightarrow$ = **SLOPE** of x-t graph
  - Slope between 2 points $\rightarrow v_{avg}$
  - Slope of tangent line at 1 point $\rightarrow v_{instant}$
  - Steeper slope = v is **[higher | lower]** magnitude

Velocity-Time Graphs



- Y-axis shows _____, x-axis shows TIME
- $a = \frac{\Delta \vec{v}}{\Delta t} \rightarrow$ = **SLOPE** of v-t graph
  - Slope between 2 points $\rightarrow a_{avg}$
  - Slope of tangent line at 1 point $\rightarrow a_{instant}$
  - Steeper slope = a is **[higher | lower]** magnitude

EXAMPLE: Using the velocity-time graph of a moving car,

a) What is the acceleration between t=15 and t=25?

b) What is the acceleration at t=10?