Ohio State Shared Values

THE OHIO STATE UNIVERSITY

VISION

The Ohio State University is the model 21st century public, land grant, research, urban, community engaged institution.

MISSION

THE UNIVERSITY IS DEDICATED TO:

- Creating and discovering knowledge to improve the well-being of our local, state, regional, national and global communities;
- Educating students through a comprehensive array of distinguished academic programs;
- Preparing a diverse student body to be leaders and engaged citizens;
- Fostering a culture of engagement and service.

We understand that diversity and inclusion are essential components of our excellence.

VALUES, PRINCIPLES AND BEHAVIORS

	Excellence and Impact	**Diversity and Innovation**	**Inclusion and Equity**	**Care and Compassion**	**Integrity and Respect**
VALUES *Enduring commitments that shape our culture*	Demonstrating leadership in pursuit of our vision and mission	Welcoming differences and making connections among people and ideas	Upholding equal rights and advancing institutional fairness	Attending to the well-being of individuals and communities	Acting responsibly and being accountable
PRINCIPLES *Established goals that reflect our values*	Advancing sustainable and evidence-based solutions through mutually beneficial partnerships	Encouraging open-minded exploration, risk-taking, and freedom of expression	Advocating for access, affordability, opportunity, and empowerment	Putting people at the center of all we do	Building trust through honesty, transparency, and authentic engagement
BEHAVIORS *Expectations for our work together*	Together, we • Stimulate creativity, critical thinking and problem solving • Proactively collaborate with others and strive for meaningful outcomes • Are bold in our endeavors and create environments to foster new approaches • Demonstrate persistence and commitment • Inspire others to join in and take action • Champion everyone's potential for success	Together, we • Are curious and open to different experiences • Recognize everyone's potential to contribute new ideas • Actively engage others' perspectives as opportunities for individual and institutional growth • Work toward creative, collaborative solutions • Use our successes and failures to learn and improve with humility	Together, we • Intentionally foster a sense of belonging where all are valued • Strive to understand and appreciate each other's backgrounds and experiences • Listen to multiple voices and engage in civil discourse • Acknowledge and address individual and systemic effects of bias and discrimination	Together, we • Are compassionate and meet people where they are • Support each other's physical and mental health • Nurture a community of kindness and gratitude • Foster individual growth and development • Empower people to overcome obstacles	Together, we • Value our greatest resource, our people, and acknowledge the contributions of every individual • Allow people to make and learn from mistakes • Work conscientiously and assume positive intent of others • Actively listen and engage in open, honest dialogue • Are good stewards of our and others' resources

In physics, you should get used to using different representations of a situation.

1. Verbal
2. Physical (the real set up)
3. Pictorial
4. Graphical
5. Mathematical

Motion in 1-D

- Position $x(t)$ – set up coordinate system
- Change of position – $\Delta x(t)$
- Rate of change of position $\frac{\Delta x}{\Delta t} \to V$ $\Delta x = V_{avg} \cdot \Delta t$
- Change of velocity ΔV
- Rate of change of velocity $\frac{\Delta V}{\Delta t} \to a$ $\Delta V = a_{avg} \cdot \Delta t$

- *Motion with constant acceleration*

Average velocity (in a time interval):

$$\vec{V}_{avg} = \frac{\vec{x}(t_2) - \vec{x}(t_1)}{t_2 - t_1} = \frac{\Delta \vec{x}}{\Delta t}$$

Instantaneous Velocity:

$$\vec{V} = \vec{V}(t) = \lim \frac{\Delta \vec{x}}{\Delta t}\bigg|_{\Delta t \to 0} = \frac{d\vec{x}}{dt}$$

Note: maybe +, - ,or 0

(*m/s*)

Average acceleration:

$$\vec{a}_{avg} = \frac{\Delta \vec{V}_{avg}}{\Delta t}$$

Instantaneous acceleration:

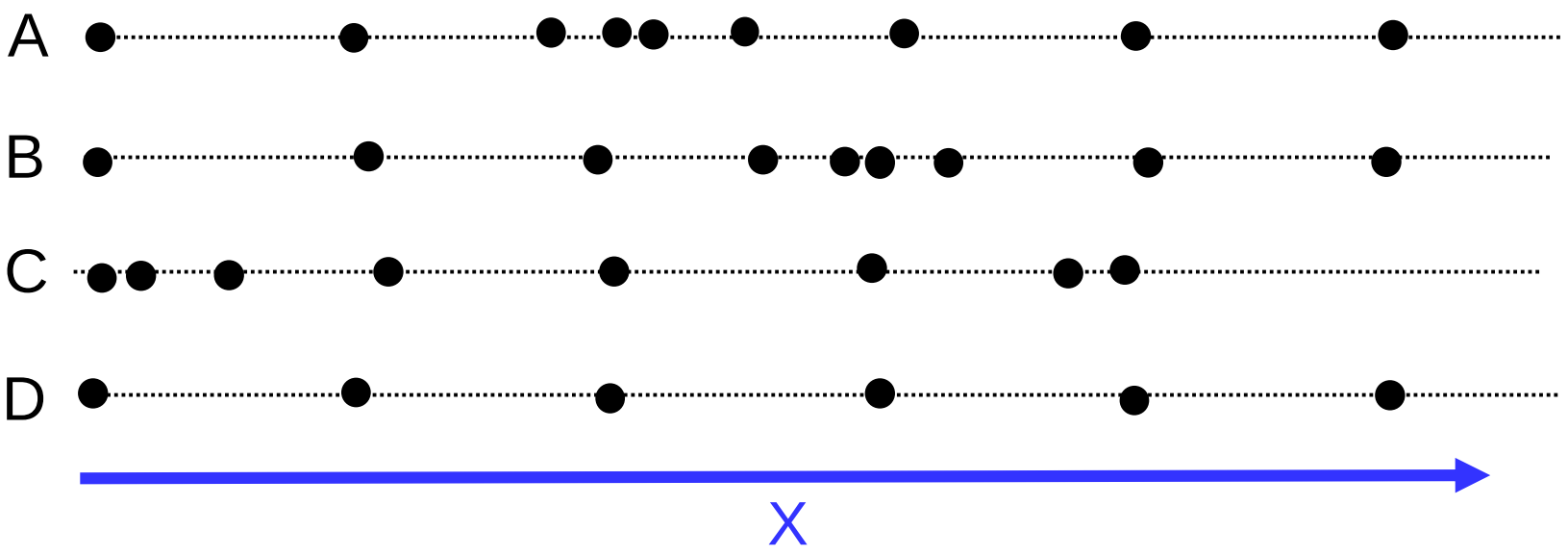
$$\vec{a} = \frac{d\vec{V}}{dt} = \frac{d^2\vec{x}}{dt^2} \qquad (m/s^2)$$

$$\vec{a} = 0 \qquad \vec{V} = const.$$

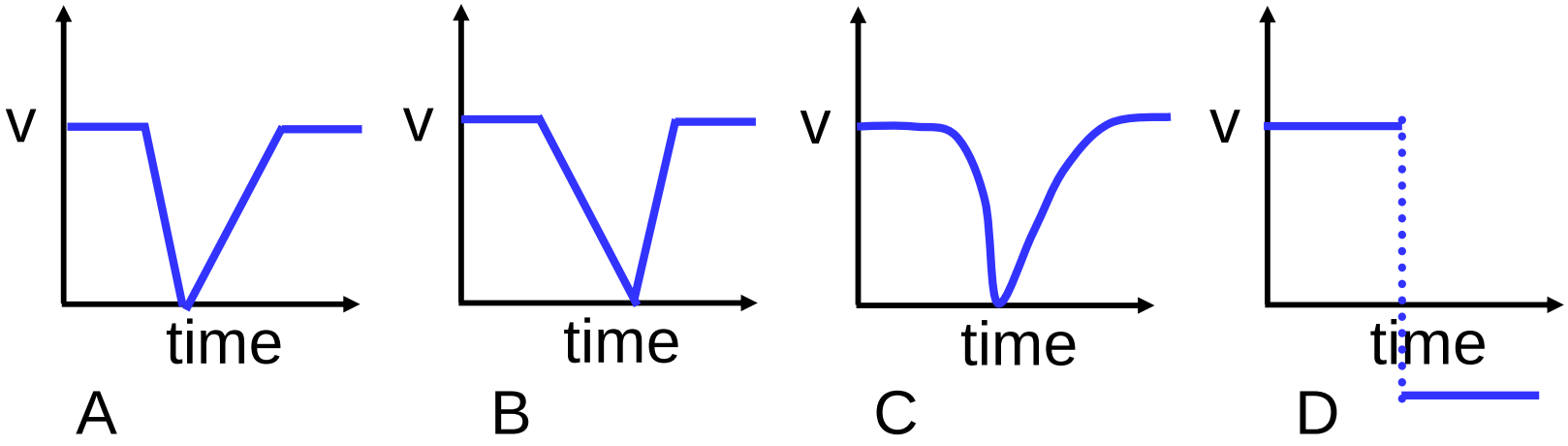
Fan Cart

- Position $x(t)$ – set up coordinate system
- Motion Diagram (Positions at unit time intervals)
- Change of position $\Delta x(t)$
- Average Velocity $V_{avg} = \frac{\Delta x}{\Delta t}$
- x - t diagram
- Instantaneous velocity $V = \frac{dx}{dt}$ -- on x-t diagram ?
- V - t diagram
- Change of velocity ΔV
- Average acceleration $a_{avg} = \frac{\Delta v}{\Delta t}$
- Instantaneous acceleration $a = \frac{dv}{dt}$ -- on V-t diagram ?
- a - t diagram

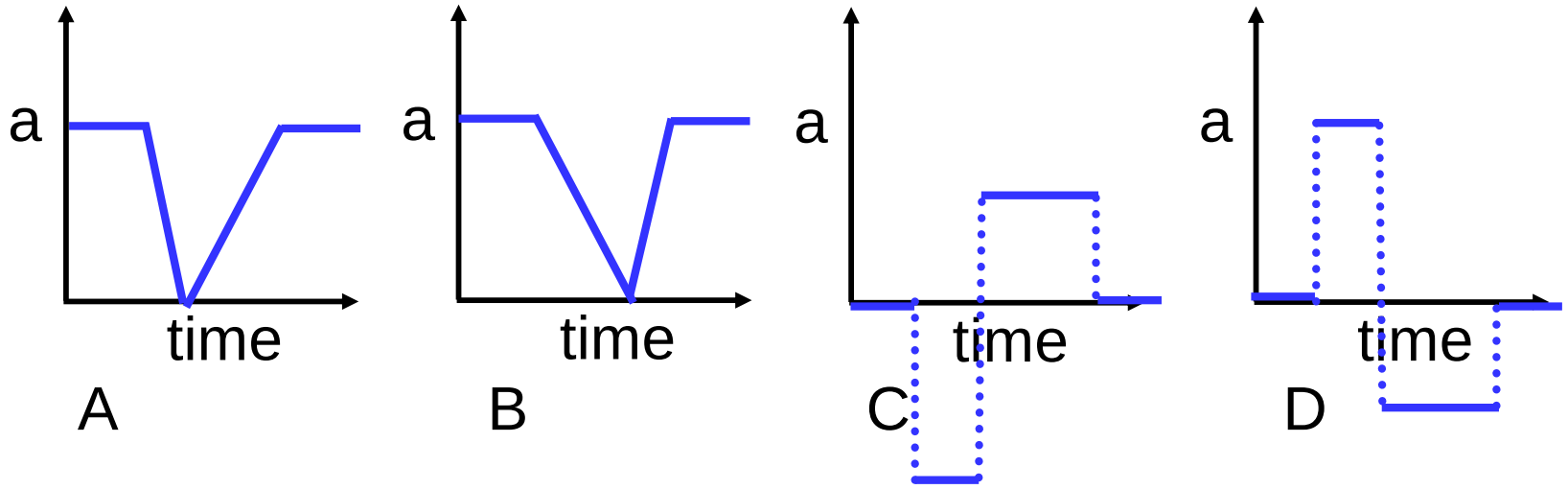
Driving a car at 60 MPH, Mary tests her brake by coming to a complete stop in 4 seconds. Then she resumes speed, taking 8 seconds to return to 60 MPH. A motion diagram is created by illuminating her car with a strobe at 2 second intervals. Which of the following best represents the correct diagram? Mary's car is represented by a dot.



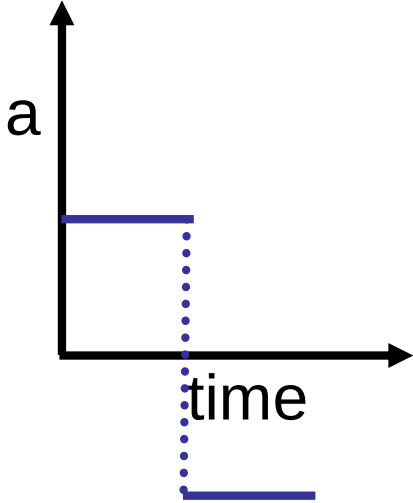
Driving a car at 60 MPH, Mary tests her brake by uniformly coming to a complete stop in 4 seconds. Then she resumes speed, taking 8 seconds to return to 60 MPH. Which of the following graphs best represents her velocity?

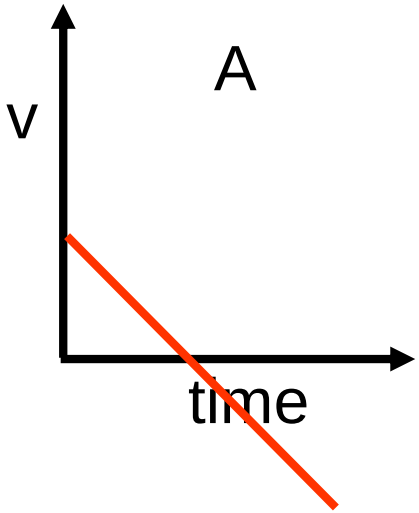


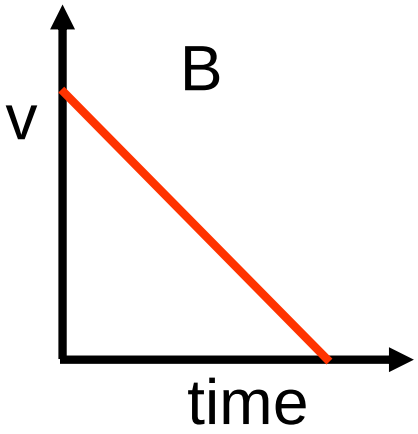
Driving a car at 60 MPH, Mary tests her brake by coming to a complete stop in 4 seconds. Then she uniformly resumes speed, taking 8 seconds to return to 60 MPH. Which of the following best represents her acceleration?

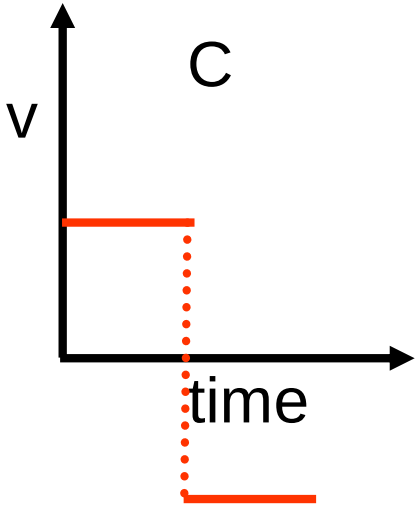


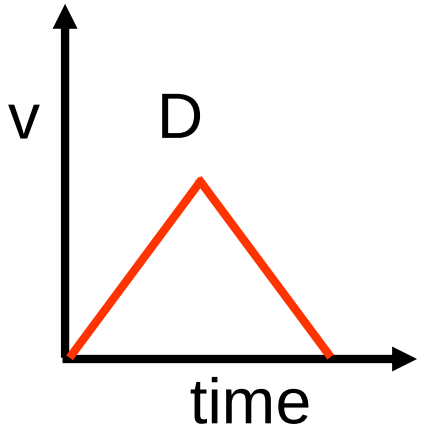
Which of the graphs of ***velocity*** versus time could correspond to the graph of ***acceleration*** versus time shown on the right?

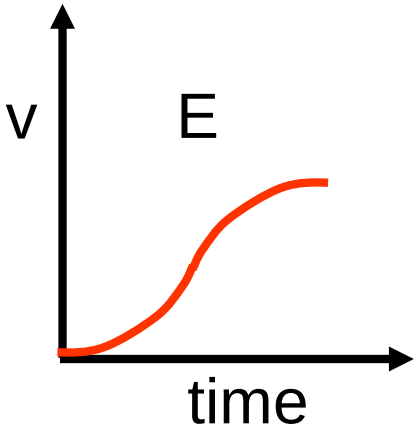




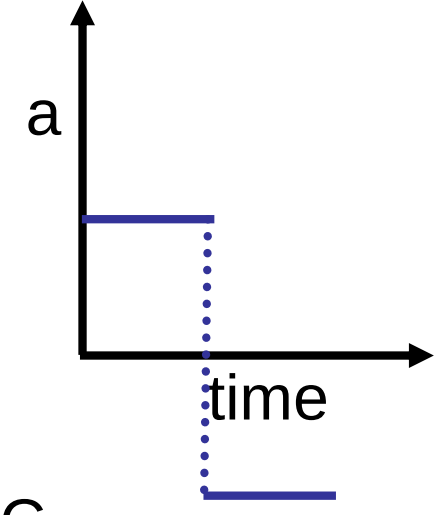




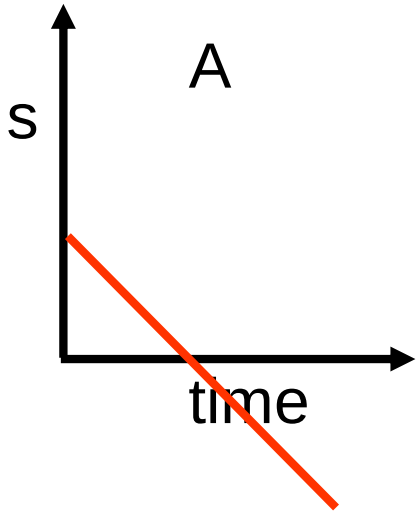




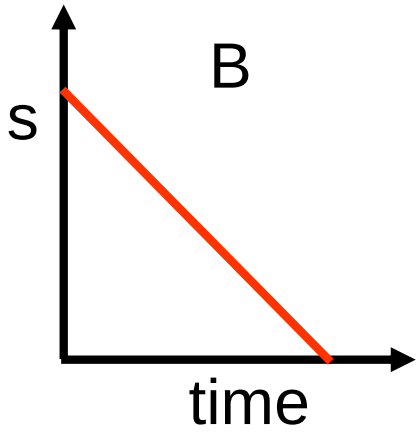
Which of the graphs of ***distance*** versus time corresponds to the graph of ***acceleration*** versus time shown on the right?



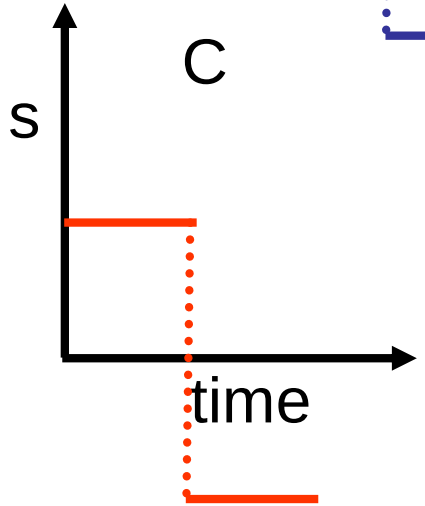
A



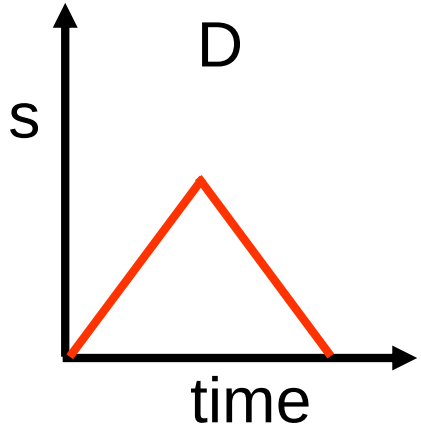
B



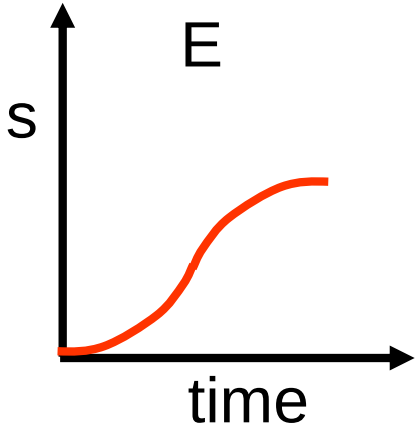
C



D



E



Which of the graphs of ***acceleration*** versus time corresponds to the graph of ***distance*** versus time shown on the right?