An Activity of a Different (Card) Sort

Presented By: Katey Ellis

Who I am ?

Katey Ellis

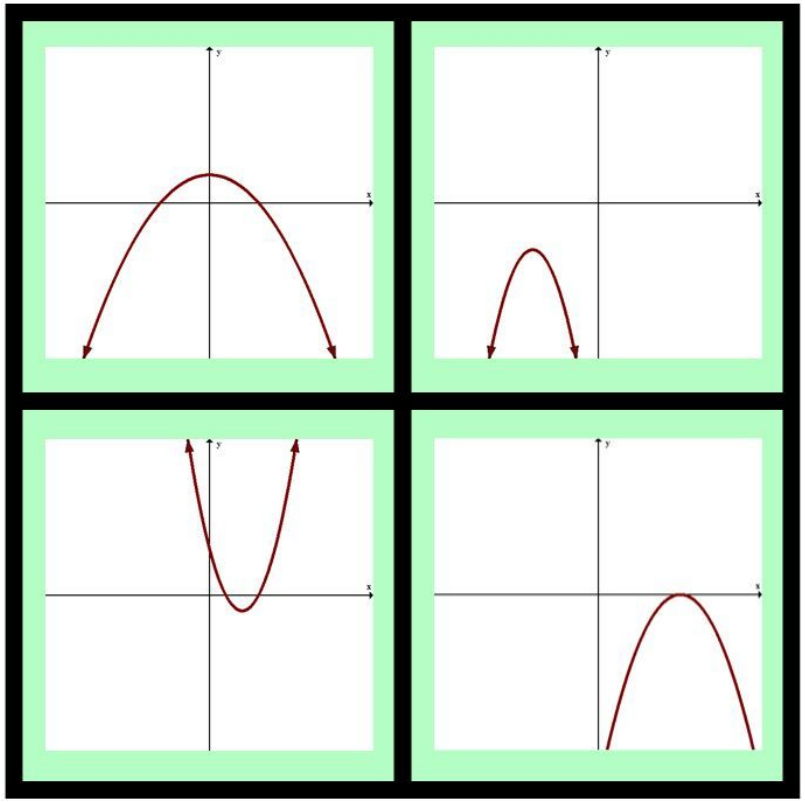
- Full-Time Math Faculty
  - 8 years
  - Small Rural College
  - Medium Suburban College

Turn and Talk

Why do you think you, or your colleagues, are hesitant to do more activities (cardsorts, games, etc.) in the classroom?

What makes each one unique?

This Example By:
Mary Bourassa
WODB Website of Examples



Which one doesn’t belong? Guidelines

- Really good way to review material
- Make sure that there is a reason all four can be considered unique
- The goal is for discussion not for one right answer

Find your group, we are doing a thing …

My Morning Commute:

8:00 Left home (in the country) for work

8:09 Got on Highway (~4 miles from home)

8:19 Exited Highway (~10 miles later)

8:27 Arrived at Work (~2 miles from exit)

1. Draw a graph of distance vs. time

2. During my drive, what was my …
   a. Average velocity in the country?
   b. Average velocity on the highway?
   c. Average velocity in town?
   d. Average velocity during the full commute?

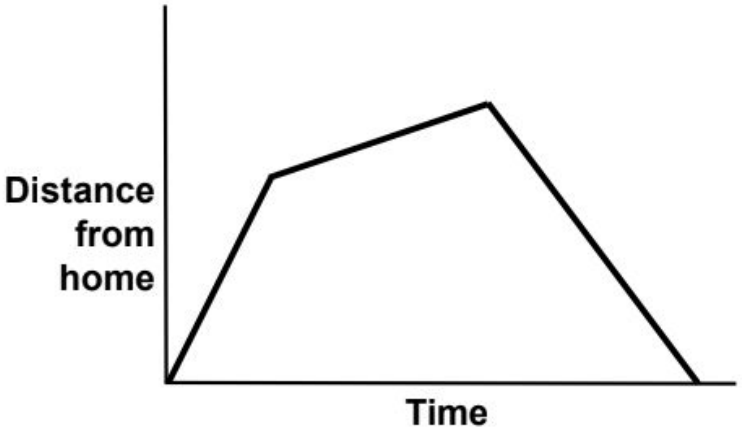
MARS Lesson: Interpreting Distance-Time Graphs

Match a Graph to a Story

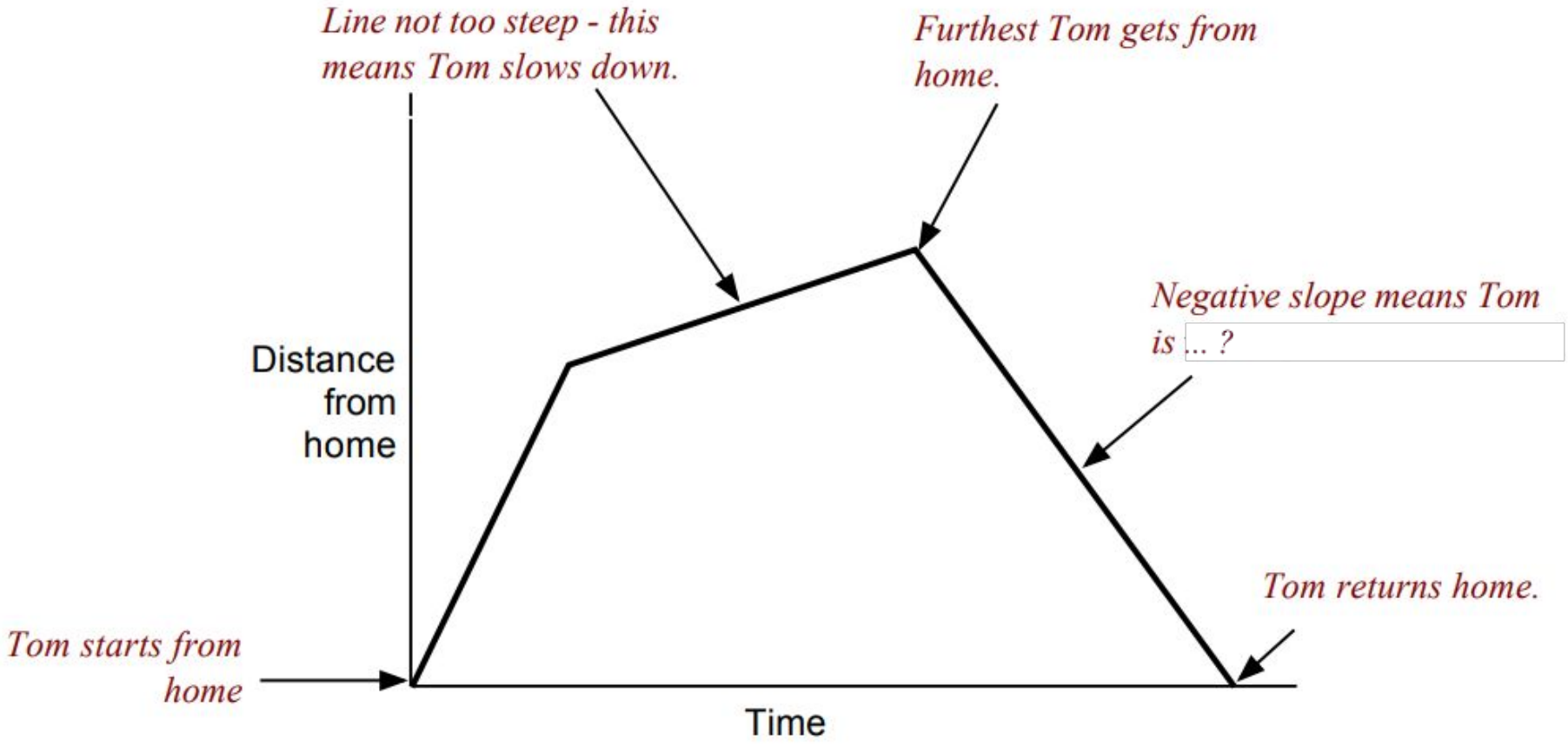
A. Tom took his dog for a walk to the park. He set off slowly and then increased his pace. At the park Tom turned around and walked slowly back home.

B. Tom rode his bike east from his home up a steep hill. After a while the slope eased off. At the top he raced down the other side.

C. Tom went for a jog. At the end of his road he bumped into a friend and his pace slowed. When Tom left his friend he walked quickly back home.



Story Match


Line not too steep - this means Tom slows down.
Furthest Tom gets from home.
Negative slope means Tom is ... ?
Distance from home
Tom returns home.
Tom starts from home
Time

Matching Cards

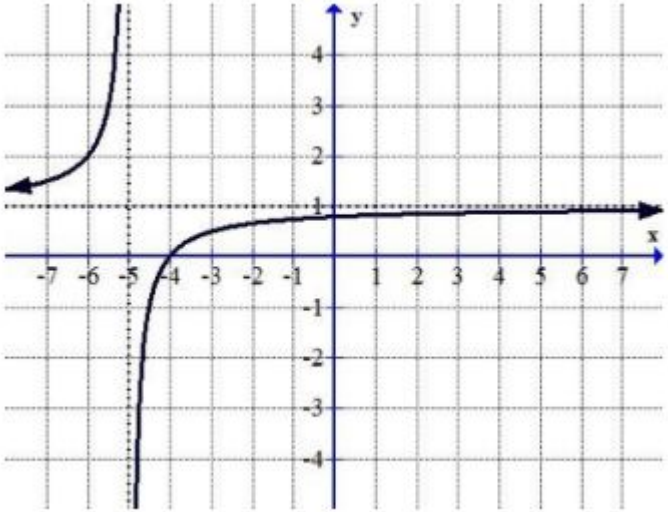
Take turns at matching pairs of cards. You may want to take a graph and find a story that matches it. Alternatively, you may prefer to take a story and find a graph that matches it.

Each time you do this, explain your thinking clearly and carefully. If you think there is no suitable card that matches, write one of your own.

DO NOT WRITE ON MY CARDS!

What is Tom's average velocity for his total travel in each scenario?

Limit Matching Designed by Karen Summerson & Ivana Seligova



$$f(x) = \frac{x-5}{x^2-25}$$

$$f(x) = -\frac{1}{x+5} + 1$$

$$f(x) = \begin{cases} \frac{x-1}{2x-2}, x \neq 1 \\ -\frac{1}{10}, x = 1 \end{cases}$$

as $x \longrightarrow 5$,
$f(x) \longrightarrow 1/10$

as $x \longrightarrow 5$,
$f(x) \longrightarrow ½$

as $x \longrightarrow \infty$,
$f(x) \longrightarrow 1$ and
as $x \longrightarrow -5^{+}$,
$f(x) \longrightarrow -\infty$

Derivative Graphs Match Up (In Amplify Classroom)

Activity Link

Other Amplify Tasks for Calculus

Check out the computational layer to see how we locked down the screens.

Lessons We Have Learned

- COVID caused a change to online.
  - These do work on Amplify (Desmos) Classroom.
- Follow-up assignment or note catcher.
- Random Groups.
- There are a lot of great tasks at:
  - Math Assessment Project MARS Lessons and Tasks
  - Active Learning Materials for 1st Semester Calculus

Student Testimonials

- Students say that they love these activities.
- They do prefer the physical cardsorts over the online because they can physically move the cards and manipulate them easier than online.
- However, they do like that online activities allow them to go back into them later for studying and for finishing after classes.

Questions?

Thank you for joining us today!

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