Today's Materials

- device
- calculator
- pencil
- notebook
- glue
- colored pencils
  - red
  - yellow
  - green
  - blue
- ruler

Using Graphs to Compare Relationships

Lesson 12

Let’s graph more than one relationship on the same grid!

Number Talk: Fraction Multiplication and Division

Warm Up

Find each product or quotient mentally.

$\frac{2}{3} \cdot \frac{1}{2}$

$\frac{4}{3} \cdot \frac{1}{4}$

$4 \div \frac{1}{5}$

$\frac{9}{6} \div \frac{1}{2}$

Race to the Bumper Cars

Activity 12.2

This activity is tied to the activity called “Tyler’s Walk” from the previous lesson.

All references to Tyler going to the bumper cars come from the statements in that activity.

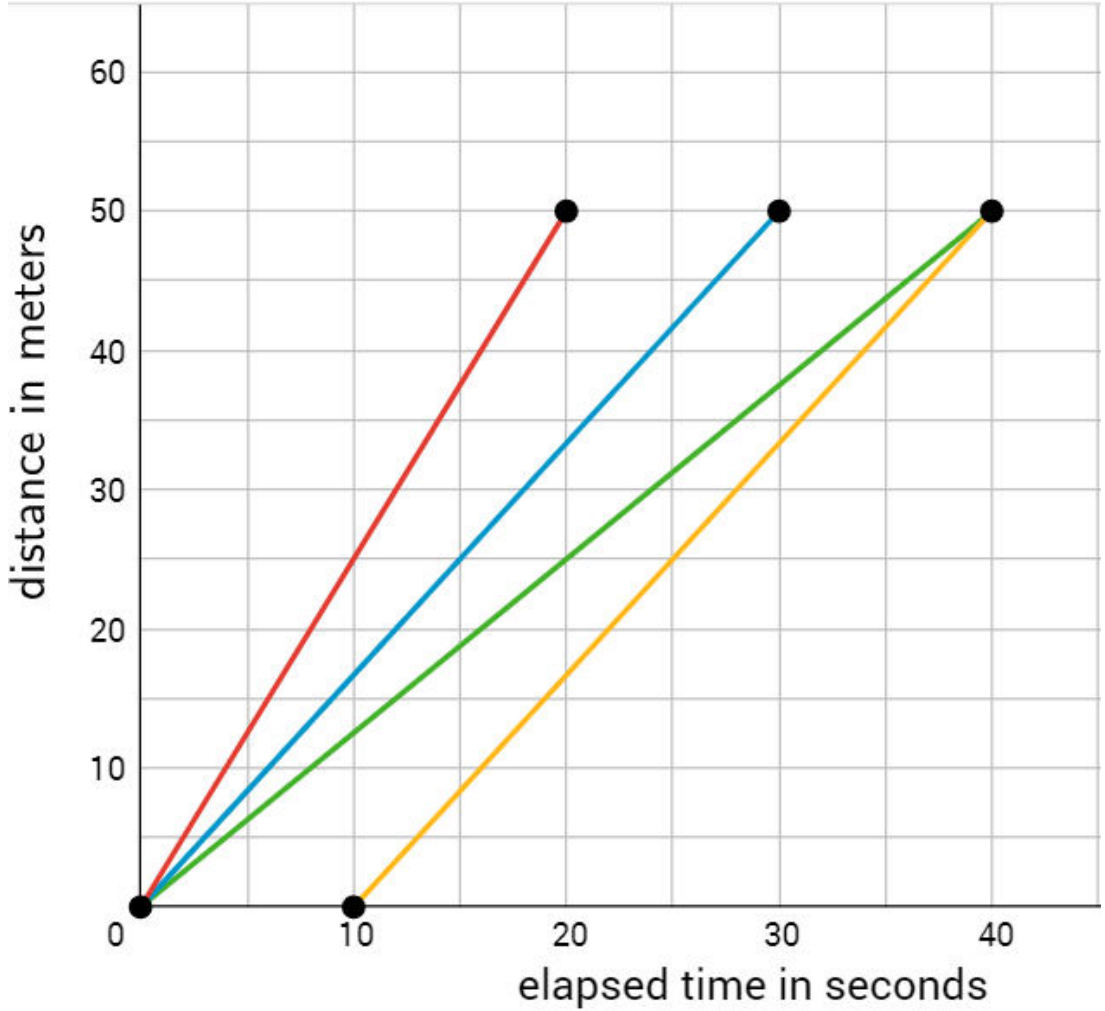
Work on this activity beginning on your own.
Then discuss and complete the activity as a team.

Work on Questions #1-3 with a partner.

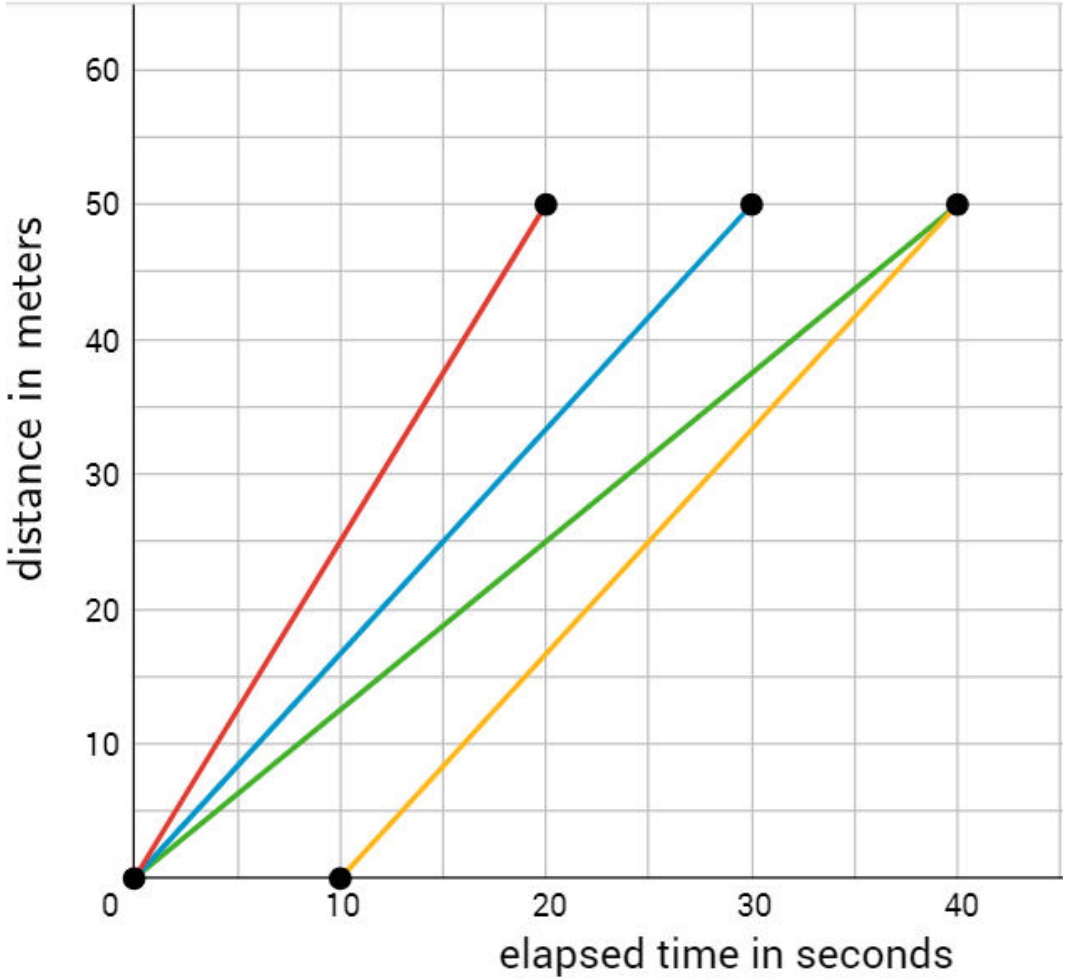
Diego's time (seconds)	Diego's distance (meters)
0	0
15	25
30	50
1	$\frac{5}{3}$

Lin's time (seconds)	Lin's distance (meters)
0	0
10	25
20	50
1	2.5

Mai's time (seconds)	Mai's distance (meters)
10	0
25	25
40	50
1	0

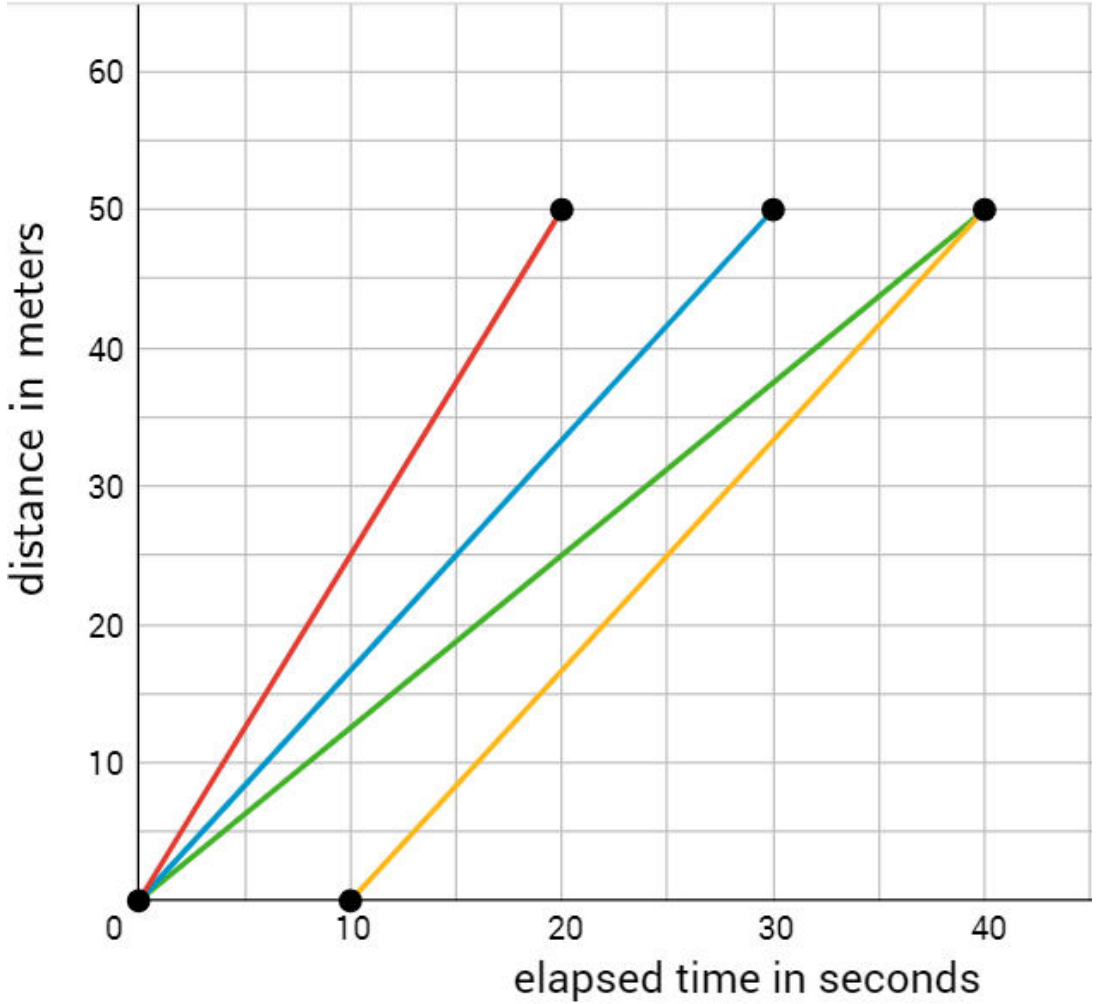


- Which is the only graph that does not represent a proportional relationship?
- For each graph that shows a proportional relationship, what is the constant of proportionality?
- How did you find the constant of proportionality for each person?
- Where do constants of proportionality occur in the tables? graphs?



A classmate argues that Mai's graph must represent a proportional relationship because she jogged at a steady rate.

How do you answer?



“Are you ready for more?”

Write equations to represent each person’s relationship between time and distance.

Space Rocks

Activity 12.3 (digital)

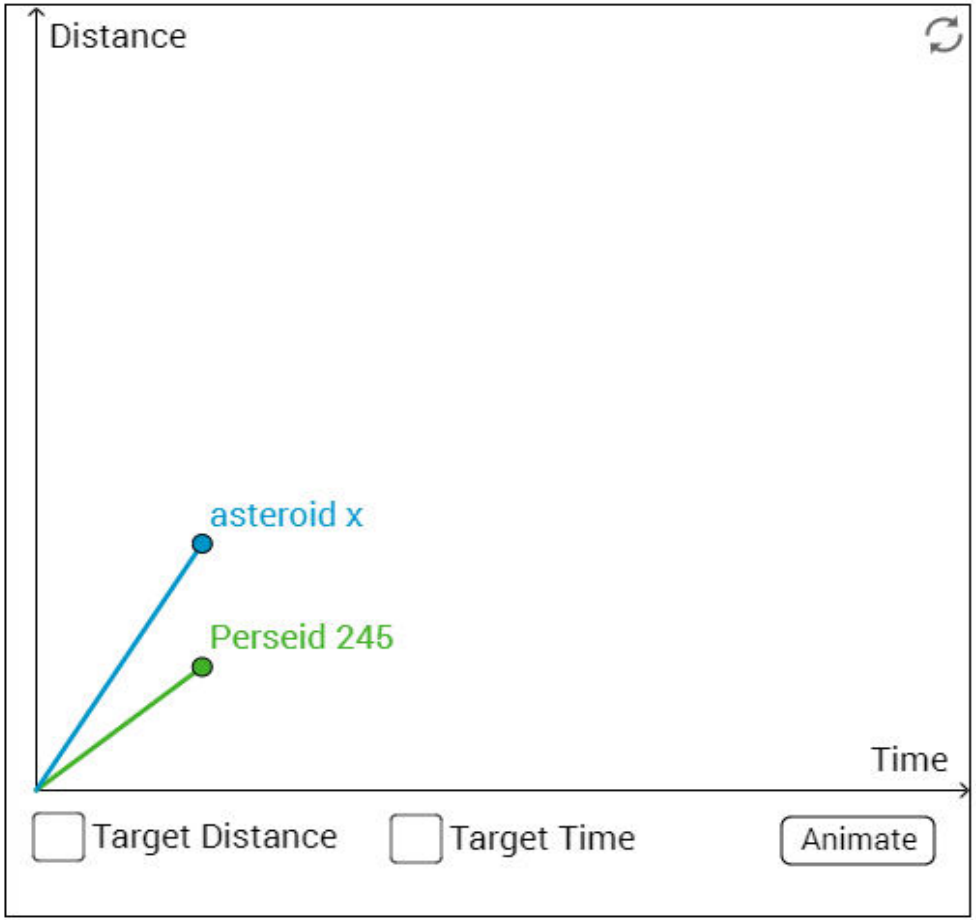
- 5 Practices

Meteoroid Perseid 245 and an unknown asteroid were traveling through the solar system.

Explore the activity to learn about the distance they had each traveled after a given time.

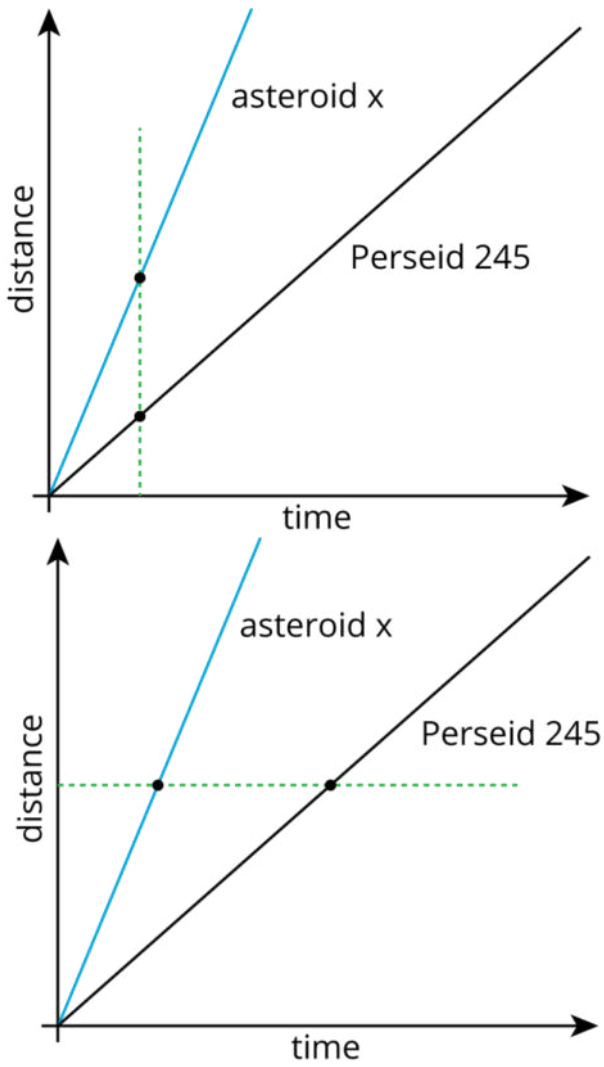
- Unit 2
- Lesson 12
- Activity 12.3

Which is traveling faster? How do you know?

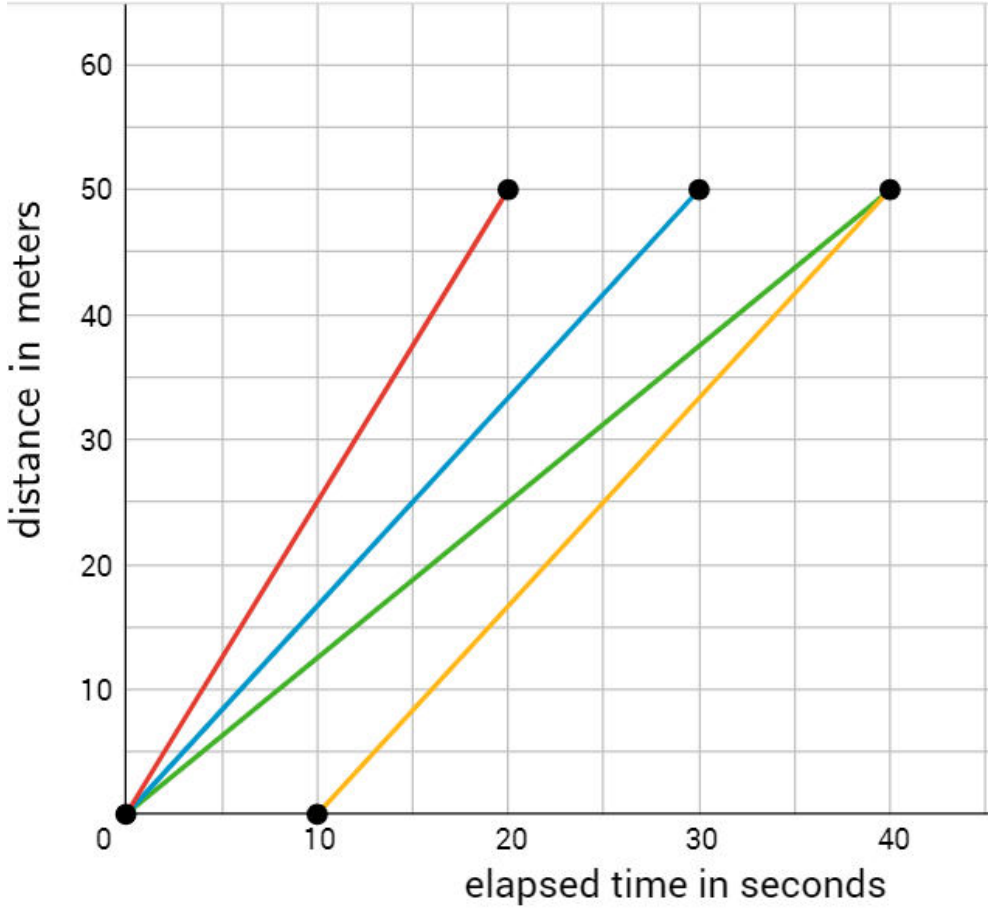


Important ideas:

- A steeper graph has a larger constant of proportionality.
- In a distance vs. time graph, a steeper graph shows a greater speed.



1. How can we tell who had gone the farthest after 10 seconds?
2. How can we tell how long it took everyone to get to the bumper cars?
3. How can we tell who was moving the fastest?



Today's Goals

- ❏ I know that the steeper graph of two proportional relationships has a larger constant of proportionality.
- ❏ I can compare two related proportional relationships based on their graphs.

Back to the Amusement Park