

QUESTIONS FOR STUDENTS: (Answer Key)

How many days will it take to travel Route 66 given each form of transportation?

- A) Go – Cart? $2500\text{miles}/250 \text{ miles per day} = 10 \text{ days}$
- B) Donkey? $2500\text{miles}/125 \text{ miles per day} = 20 \text{ days}$
- C) Unicycle? $2500\text{miles}/50 \text{ miles per day} = 50 \text{ days}$
- D) Po-Go Stick? $2500 \text{ miles}/10 \text{ miles per day} = 250 \text{ days}$

Is there a relationship between the distance traveled per day and the overall time taken to travel Route 66? If so, explain?

There is an inverse relationship. The more miles per day you travel the fewer days it will take you to reach your destination.

Fill in the blank:

If the miles per day increase, then the total time of the trip _____ (increases/decreases). **decreases**

If the total time of the trip increases, then the miles per day _____ (increase/ decrease). **decrease**

Making a mathematical expression:

What mathematical operation is being used in this problem: addition, subtraction, multiplication, or division? **Division is being used.**

What is being divided? Why? **To find the time, divide the distance by the rate. Because $Distance = Rate * Time$, to solve the equation for T(time), you would divide both sides by R(rate).**

If D = “the distance of Route 66” and “R = miles traveled per day” how do you find “T = the overall time of the trip”? **Divide the distance (D) by the rate (R).**

Complete the equation $D = \underline{\hspace{1cm}} * \underline{\hspace{1cm}}$ **$D = R * T$**

Solve the equation for T. $T = \underline{\hspace{1cm}} / \underline{\hspace{1cm}}$ **$T = D/R$**

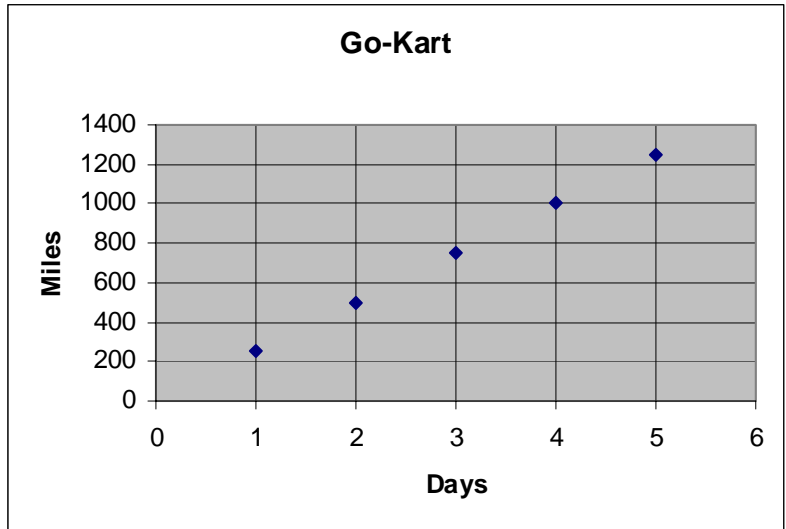
Solve the equation for R. $R = \underline{\hspace{1cm}} / \underline{\hspace{1cm}}$ **$R = D/T$**

MAKING TABLES TO ILLUSTRATE RATE OF CHANGE

Make four different tables, one for each of the methods of travel. Graph the data from the table.

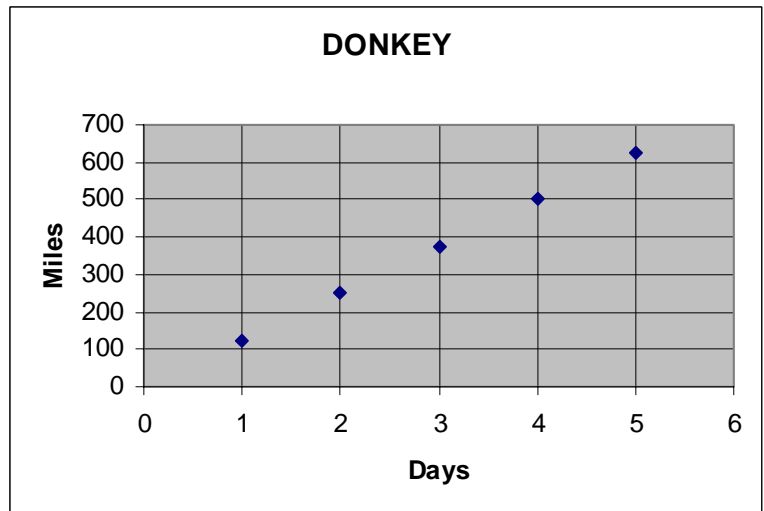
GO - KART

Day	Miles
1	250
2	500
3	750
4	1000
5	1250



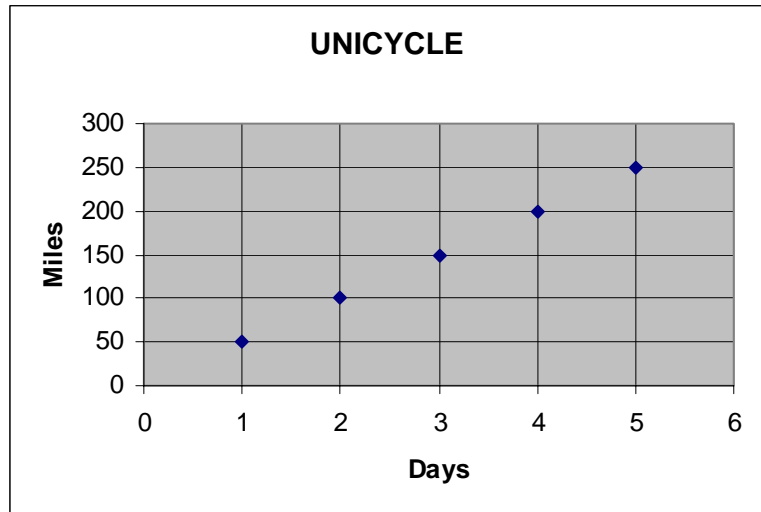
DONKEY

Day	Miles
1	125
2	250
3	375
4	500
5	625



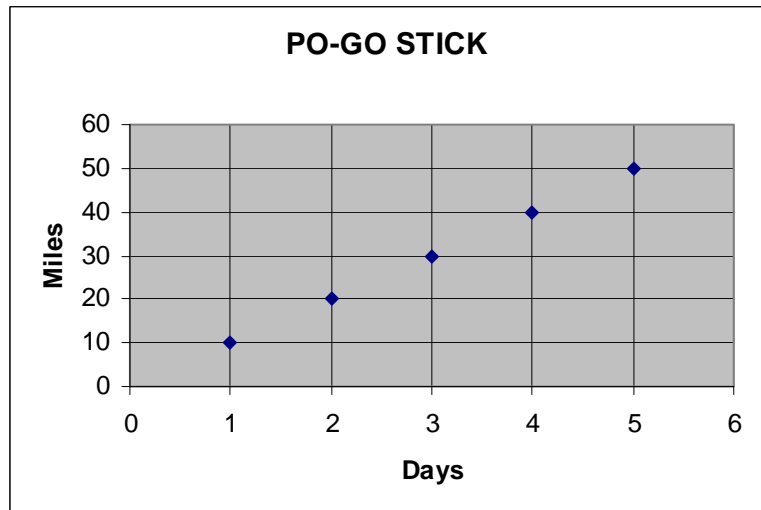
UNICYCLE

Day	Miles
1	50
2	100
3	150
4	200
5	250



PO – GO STICK

Day	Miles
1	10
2	20
3	30
4	40
5	50



ASSESSMENT OPTIONS (constructed response)

How many days will it take a person walking backwards at 20 miles a day?

$$2500/20=125 \text{ DAYS}$$

If a person completed the trip in 6 days, how many miles would they cover in one day (rounded to the nearest hundredth)?

$$2500/6=416.67 \text{ MILES PER DAY}$$

If a football field is 100 yards and Terrell Owens runs 2 yards in one second, then how much time will it take him to run the entire field? Explain.

100/2=50 SECONDS. For every second that T.O. runs, he moves 2 yards closer to the other end zone.

EXTENSIONS:

Create a distance between 500 and 1,000 miles. List 3 different rates per mile. Calculate the time travel for each rate.

Answers will vary: Distance/Rate = Time

e.g. 800 miles. "A" goes 20mph, "B" goes 50mph, & "C" goes 211 mph.

A would take $800/20=40$ hours

B would take $800/50=16$ hours

C would take $800/211=3.79$ hours

Choose a constant time between 5 and 10 hours. Use the rates from the previous problem and calculate the 3 distances.

Answers will vary: Distance = Rate * Time

e.g. 7 hours.

A would travel $20*7=140$ miles in seven hours.

B would travel $50*7=350$ miles in seven hours.

C would travel $211*7=1477$ miles in seven hours.