

Name: _____

Date: _____

FUNCTION PROJECT: A Day of Fun

PART 1: TRANSPORTATION

You and a group of friends are off to have a day of fun! Before you head out on your adventure, you need to choose a mode of transportation to get you to your destinations. The four different transportation choices are represented by the functions below. Decide which method of transportation you would like to use for the day. Use your choice to answer the questions that follow.

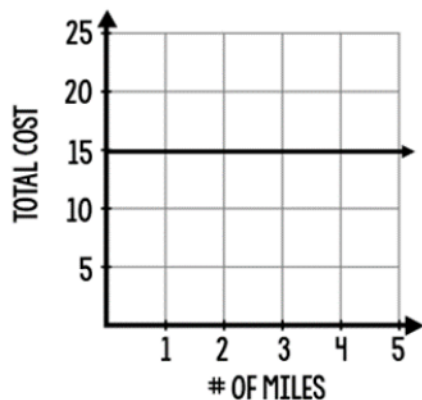
Option #1: Taxi

NUMBER OF MILES	3	6	9	12
TOTAL COST	26.95	28.90	30.85	32.80

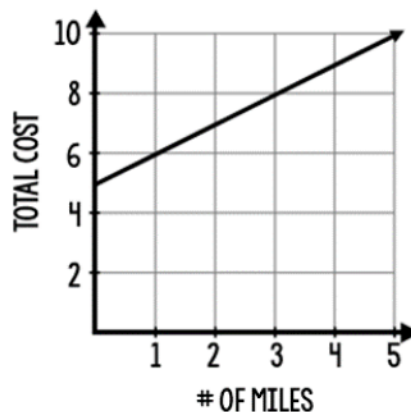
Option #2: City Bus

NUMBER OF MILES	2	4	6	8
TOTAL COST	0.60	1.20	1.80	2.40

Option #3: Light Rail



Option #4: Motorized Scooter



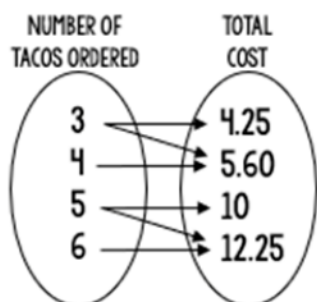
- Which mode of transportation did you choose? Why?
- Write an equation to represent the function you chose.
- What would the cost of your transportation be if you drove:
 - 10 miles?
 - 25 miles?
 - 42 miles?
 - 68 miles?

PART 2: FOOD

You want to start off your day by eating something yummy! Your different lunch options are shown below. Use the data to answer the questions that follow.

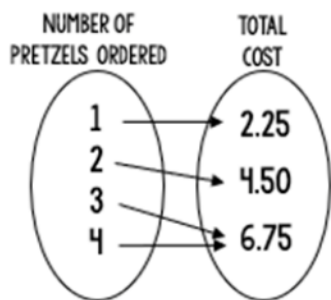
Option #1: Tasty Tacos

Tasty Tacos offers delicious steak, chicken, or fish tacos served in your choice of a flour or corn tortilla. The mapping diagram below shows the number of tacos that previous guests have ordered and the total cost of their order.



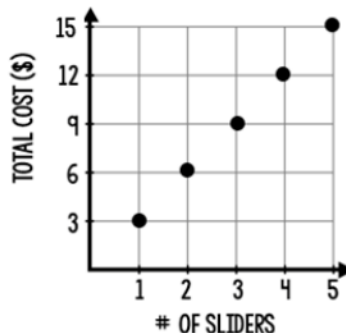
Option #3: Pretzel Time

Pretzel Time serves warm, salty pretzels with your choice of dipping sauce. The mapping diagram below shows the number of pretzels that previous guests have ordered and the total cost of their order.



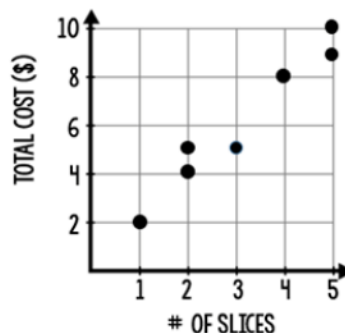
Option #2: Burgerville

Burgerville serves mouth watering sliders with your choice of toppings. The graph below shows the number of sliders that previous guests have ordered and the total cost of their order.



Option #4: Pete's Pizzeria

Pete's Pizzeria offers delicious cheese, pepperoni, or supreme pizza with thin or thick crust. The graph below shows the number of slices that previous guests have ordered and the total cost of their order.



- 1) Which restaurant would you choose to eat at?
- 2) Does the restaurant you selected represent a function? Why or why not?
- 3) State the domain and range of the restaurant you chose.
- 4) Which restaurant would be your second choice to eat at?
- 5) Does your second choice represent a function? Why or why not?
- 6) State the domain and range of your second choice.

PART 3: THEME PARK FUN

After lunch, you and your friends decide to head a to a local theme park for some afternoon fun in the sun! You must choose between the three theme parks shown below! Use the table, graphs, and equation to answer the questions that follow.

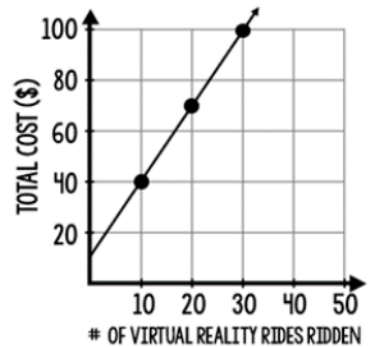
Option #1: Big Wave Waterpark
Ride waterslides galore!

NUMBER OF SLIDES RIDDEN	TOTAL COST
2	10
4	15
6	20

Option #2: Coaster City
Ride the tallest roller coasters around!!

The total cost to ride roller coaster can be represented by the equation $y = 5x + 7.50$, where x represents the number of roller coasters ridden and y represents the total cost.

Option #3: Virtual Reality Land
Ride the latest and greatest virtual reality rides!



- 1) Each theme park charges an entrance fee plus an additional fee per ride. Write a function for each park.
- 2) Which theme park has the highest cost per ride? Explain.
- 3) Which theme park charges the highest entrance fee? How do you know?
- 4) Which theme park would you choose for you and your friends? Why?
- 5) If you went on five rides at the park of your choice, how much would you pay in total?
- 6) Which theme park would be the cheapest if you rode exactly 10 rides?

PART 4: CONCERT TICKETS

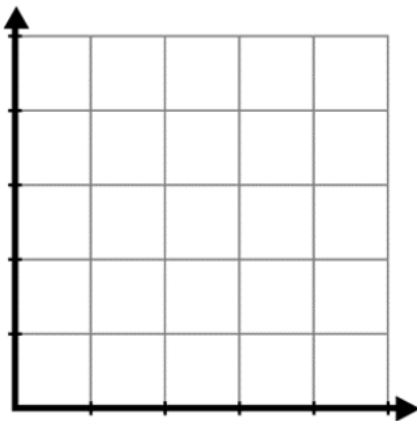
- 1) For your last event of the day, you are going to purchase tickets to watch your favorite artist perform! Which artist would you choose to see? Why?
- 2) Pick a number between 50 and 250 to represent the cost of ONE ticket:
- 3) In addition to the cost of a ticket, there is also a \$15 processing fee that you must pay (You only pay this once no matter how many tickets are purchased). Write a function to represent the cost of your concert tickets:
- 4) Choose four appropriate values of x to complete the function table below. Then, state the domain and range of the function.

x	$f(x) = \text{-----}$	$f(x)$

The domain is:

The range is:

- 5) Graph the function.



- 6) What would the total cost of the tickets be if you and your friends purchased 12 tickets to the concert?

PART 5: MEET & GREET

Great news! You and your friends were picked to go backstage after the concert to meet your favorite artist. Each fan backstage has the option to choose one of the following:

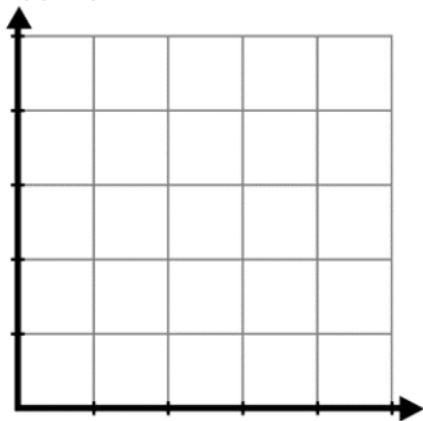
OPTION #1: PICTURES

YOU CAN TAKE A PICTURE WITH YOUR FAVORITE ARTIST AND RECEIVE A FRAMED PHOTO OF THE TWO OF YOU FOR \$20.

OPTION #2: AUTOGRAPHED POSTER

YOU CAN TALK TO YOUR FAVORITE ARTIST AND HAVE HIM/HER SIGN A CONCERT POSTER FOR \$10.

- 1) If you could only choose one of the options, which one would you choose? Why?
- 2) Write a function to represent the option that you chose. (If you chose pictures, write a function to express the total amount of money the artist earns for pictures. If you chose the autographed poster, write a function to express the total amount of money the artist earns for selling posters.)
- 3) Would domain values of -2 , -1 , 0 , and 1 be appropriate choices for your function? Why or why not?
- 4) Graph the function. Use appropriate labels.



- 5) Using your function, find:
 - a. $f(9)$
 - b. $f(13)$
 - c. $f(25)$

PART 6: HEADED HOME

Sadly, your day of fun is over and it's time to head home. But, oh no! There is a ton of traffic! Use the mode of transportation that you chose in part one and the tables below to answer the questions that follow.

Option #1: Taxi

NUMBER OF MINUTES	5	10	15	20
MILES DRIVEN	3.75	7.5	11.25	15

Option #2: City Bus

NUMBER OF MINUTES	2	4	6	8
MILES DRIVEN	0	1	1	2

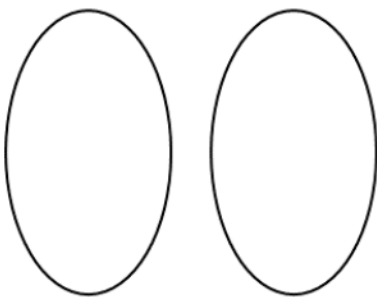
Option #3: Light Rail

NUMBER OF MINUTES	3	6	9	12
MILES DRIVEN	2	2	2	2

Option #4: Motorized Scooter

NUMBER OF MINUTES	10	20	30	40
MILES DRIVEN	1	2	3	4

- 1) Create a mapping diagram of your mode of transportation below.



- 2) Does your mode of transportation represent a function? Why or why not?
- 3) If your mode of transportation a function, is it also linear? Why or why not?
- 4) If you could change your method of transportation, would you? Why or why not?