Title: Playworld Amusement Park

Brief Overview:

Through activities related to visiting an amusement park, students evaluate one- and two-operation expressions on a function table. By completing the function tables, students identify ordered pairs and graph them on a coordinate plane. Once graphed, students evaluate two expressions on the same graph to compare the result for different values of the variable.

NCTM Content Standard:

Understand patterns, relations, and functions

- Represent and analyze patterns and functions using words, tables, and graphs.

Grade/Level:

Grade 5/6

Duration/Length:

3 days – 60 - 70 minutes per session

Student Outcomes:

Students will:

- Graph ordered pairs on a coordinate grid.
- Evaluate one and two operation expressions for given values.
- Complete function tables using given one and two operation rules.
- Graph linear functions on a coordinate plane.
- Analyze a system of two graphs to make a decision.

Materials and Resources:

Day 1

- Student resource "Pre-assessment"
- Teacher resource "Pre-assessment"
- Kitchen sponges (3-5)
- Student resource "Tickets"
- Teacher resource "Sponge Toss Table"
- Teacher resource "Vocabulary Cards" (function, expression, equation, variable)
- Student resource "Function Tables Practice"
- Teacher resource "Function Tables Practice Answer Key"
- Student resource "Concentration Cards"

- Student resource “Blank Concentration Cards”
- Student resource “Snack Bar Savings Exit Ticket”
- Teacher resource “Snack Bar Savings Exit Ticket Answer Key”

Day 2

- Student resource “Fortune Teller”
- Teacher resource “Fortune Teller Directions”
- Student resource “Blank Coordinate Grids”
- Student resource “Function Table Graphing Practice”
- Teacher resource “Function Table Graphing Practice Answer Key”
- Student resource “Flyin’ Frog”
- Teacher resource “Flyin’ Frog Answer Key”
- Student resource “Jumpin’ Jackrabbit”
- Teacher resource “Jumpin’ Jackrabbit Answer Key”
- Student resource “Crazy Ray’s Dance Machine”
- Teacher resource “Crazy Ray’s Dance Machine Answer Key”

Day 3

- Student resource “Blank Coordinate Grid”
- Student resource “Playworld Ticket Prices”
- Student resource “Supertown Ticket Prices”
- Teacher resource “Wonderworld vs. Laughland”
- Student resource “Parking Rates”
- Teacher resource “Parking Rates Answer Key”
- Student resource “A Friendly Suggestion”
- Teacher resource “A Friendly Suggestion Answer Key”
- Sticky notes or index cards
- Student resource “Summative Assessment”
- Teacher resource “Summative Assessment Answer Key”

Development/Procedures:

Day 1

Pre-assessment

- Distribute student resource “Pre-assessment” to each student. Each of the questions relate directly to prerequisite knowledge needed to perform the tasks of the unit. As students finish, note difficulties some students may have and plan accordingly to reteach the concepts before moving on with the lessons. An answer key is provided.

Engagement

- Access background knowledge of amusement parks by telling students that they will be playing an amusement park game in your classroom today. The game will earn them tickets (see teacher resource, "Tickets").
- It will be the students' job to keep track of the number of tickets they earn. They may track their tickets in any way they choose at this point.
    - Sponge Toss – Draw a circle roughly the size of a dinner plate on the chalkboard. Place a piece of tape on the floor at least eight feet from the chalkboard. Students throw a damp sponge at the target. They earn three tickets every time they hit the target. They must throw five times.
- Once students in the Sponge Toss game have thrown the sponge five times, students return to their seats with their data from the game. Discuss with students the variety of data accumulated through the games. A perfect score in the Sponge Toss game will give 15 tickets.

Exploration

- Post on chart paper or project teacher resource "Sponge Toss Table."
- Say: "Here is the data from another version of the Sponge Toss game. Complete the chart and tell how this game is different from the one we played in our class today. Write an expression to describe the relationship between the number of hits and the number of tickets earned." An answer key is provided.
- Circulate through the room as students are completing the charts. Note students having difficulties writing the expression or completing the function table.

Explanation

- Allow students to share their strategies for completing the function table. Be sure to have a variety of responses included and emphasize strengths of each way.
- Ask: "What do all of the scores have in common for this game?" (Answer: For the Sponge Toss game, each score is a multiple of 5.)
- Say: "A function table and its rule allow us to describe any number of "hits" in our game including numbers that aren't on our function table." (Example: If we allowed 7 throws, you could predict the number of tickets earned for 7 hits by seeing the relationship between the values presented.)
- Review definitions for the vocabulary related to the concepts presented.
    - Function – a relationship in which every value of x (variable – how many sponge tosses missed, or how many matches found in this case) has a unique value for y (the number of tickets earned).
    - Expression – a variable, number, or combination of variables, numbers and operational symbols used to show a mathematical relationship ($3x$)
    - Equation – A mathematical statement of equality between two expressions ($x - 1 = y$)

    - Variable – A letter or symbol that represents a number (the value that changes, like the number of targets hit)
- Distribute student resource "Function Tables Practice" and model solving the first function table. Use the expression to determine the *y* value in the chart.
- Model a two-operation function from the same resource.
- Guide students through the remainder of the student resource "Function Tables Practice." Students will complete function tables for the *y* value. Some tables contain two operation rules. An answer key is provided.

Application

- Use the student resource "Concentration Cards" to allow students another opportunity to work with function tables and expressions. Students match an expression to the respective function table.
- Say: "You will now get the chance to continue looking for relationships between sets of numbers. You and a partner will play a game where you will need to match the function table to the expression that shows the rule for that table."
- As students play, use anecdotal notes to describe students' success with the task.

Differentiation

Reteach

- Students experiencing difficulties identifying the relationships should work in a small group to have more direct instruction. Play a simplified version of the Sponge Toss game using a different value for the number of tickets per hit. Focus on describing how the values change in a predictable way for each set of values.

Enrich

- Students showing mastery of the matching exercise could be given student resource "Blank Concentration Cards." This allows them to create their own concentration game where 12 cards contain expressions and the other 12 cards contain function tables that match the expressions. They may create one or two operation expressions. These can be exchanged with a partner when completed.

Assessment

- Distribute student resource "Snack Bar Savings" and have students complete the task independently.
- Say: "The Playworld Amusement Park has issued coupons in the newspaper. The coupon gives the bearer $4 off at any of the snack bars in the park. Complete the table for the given values. Then add a few values for x and its corresponding value for y."
- Collect and evaluate student responses for understanding. An answer key is provided.

Day 2
Engagement

- Say: "Yesterday we spent time finding relationships between values in a function table. In any function table, we can represent the input with an x and the output with a y value. These values can be made into ordered pairs and graphed on a coordinate grid."
- For each group of four students, use the student resource "Fortune Teller" to reinforce graphing ordered pairs. Students create an ordered pair and then identify the point that matches the ordered pair on the inside of the fortune teller.
- Refer to teacher resource "Fortune Teller Directions" for instructions on folding.

Exploration

- Post on chart paper or project teacher resource "Sponge Toss Table." Distribute teacher resource "Coordinate Grids" to each student. Students will label the coordinate plane before completing this activity.
- Say: "Here is the function table from our Sponge Toss Game yesterday. Use the values from our table to create ordered pairs and then graph them on the coordinate plane."

Explanation

- Present examples of student work to the class highlighting possible misunderstandings.
- Say: "Does graphing the ordered pairs from a function table make the relationship clearer?" "What predictions can you make about values for *x* that aren't on our function table?" (Answer: The graph makes it easier to predict values not on the table, and in some situations, non-whole number values for *x*.)
- Clarify that graphing functions on a coordinate plane is a strategy that allows us to make predictions and generalizations about a function by looking at the data plotted as a series of points (and sometimes a line) on a coordinate plane.
- Use student resource "Function Table Graphing Practice" to model and guide students through using *x* and *y* values from function tables to create ordered pairs on coordinate planes. An answer key is provided.

Application

- Distribute student resource "Flyin' Frog" to each student.
- Say: "Each car on The Flyin' Frog roller-coaster holds 4 people. This table will describe the relationship between the number of people that are in line for the ride and how many cars are needed to hold that number of people. Use the expression $x \div 4$ to determine y, the number of cars. Then graph the ordered pairs on the coordinate plane below the function table." An answer key is provided.

Differentiation

Reteach

- Students having difficulty graphing ordered pairs should be pulled into a small group and given explicit reteaching on the Cartesian Coordinate system. Use the student resource "Flyin' Frog" to review identifying ordered pairs from a function table, the *x* and *y* axis, and ordered pair naming conventions (*x,y*).

Enrich

- Students who are successful with graphing the ordered pairs from a function table should be assigned student resource "Jumpin' Jackrabbit." This situation follows the same idea as the "Flyin' Frog," but each car holds six students. In this task, the ordered pairs are graphed and the students complete the function table from the coordinate plane. An answer key is provided.

Assessment

- Distribute and assign student resource "Crazy Ray's Dance Machine."
- Students are presented with four function tables and one coordinate plane with values graphed. Students need to choose the table that produced the values shown on the graph. An answer key is provided.

Day 3

Engagement

- Use the kitchen sponges from Day One and teacher resource "Coordinate Grid" (projected on the board or copied to a transparency) to play a new version of the Sponge Toss game.
- Label the axes on the projected coordinate grid on the board. Students throw the damp sponge at the grid and then name the ordered pair closest to the point at which the sponge hit the board.

Exploration

- Divide the class into two groups. Give half of the class student resource "Playworld Ticket Prices" and half of the class student resource "Supertown Ticket Prices." Answer keys are provided.
- Say:"Amusement parks charge for their services differently. Half of you are going to pretend you are going to Playworld while the other half will pretend you are going to Supertown. Evaluate for the total cost (*y*) and then graph the ordered pairs from your function table on the coordinate plane."
- Each group follows the procedures from the previous day's work solving for *y* (the total price) for different values of *x* (the number of tickets purchased).
- Circulate and observe students as they evaluate the expressions for the total price ensuring they are creating their ordered pairs and graphing correctly.

Explanation

- Using a projector and teacher resource "Blank Coordinate Plane," transpose the student data for each amusement park to one coordinate plane using different colors to represent each function.
- Say: "Compare these two tables and graphs. What similarities and differences do you see? (Answer: Both graphs trend upwards, but they are at different places on the planes and one is "steeper." Other answers may vary.)
- Say: "Based on the data and its graph, which amusement park is cheaper to attend?" (Answer: Students may initially say Playworld because it is "lower on the plane," but guide them to the understanding that Supertown may be cheaper depending on the number of ride tickets you buy.
- Model and discuss this same idea using teacher resource "Wonderworld vs. Laughland." This resource shows two expressions graphed on the same coordinate plane. It is important to emphasize the significance of the lines intersecting. It is the point where both cost exactly the same and one park becomes cheaper as the other becomes more expensive. In other words, it is the point at which they switch roles.

Application

- Say: "I am sure you have heard your parents complain about how expensive it is to visit an amusement park. We have just taken a close look at how parks charge for entry. Now let's take a look at another way amusement parks make money, parking."
- Distribute student resource "Parking Rates" Students are asked to evaluate two-operation expressions for a given number of people in the car *(x)* and to determine the total cost per car *(y)*.

Differentiation

Reteach

- Students who are having difficulty interpreting multiple graphs on one coordinate grid would benefit from direct instruction on the "shape" of a given graph. A steeper line denotes the growth of the y value is greater with every increase in x, while a flatter line means the y value is growing at a slower rate.
- Illustrate this idea in a small group by changing the values in the "Parking Rate" example to show how it affects the graph.

Enrich

- Students who are having success with graphing two functions on one coordinate grid should be assigned student resource "A Friendly Suggestion." An exemplary letter is provided on the answer key.
- This task requires students to write a friendly letter to a friend suggesting which parking lot would be the best choice for the family to use.

Assessment

- Distribute a sticky note or note card to each student.
- Display student resource "Parking Rates" for the class to view.
- Say: "A family of 3 goes to Playworld one day. They have a wonderful time together. Unfortunately, it begins to rain and they need to leave the park after only 4 hours. They paid $14 dollars for parking. Were they parked in the Green Lot or the Blue Lot?" (Answer: Green Lot)
- Students answer (with support) on their note card. Collect cards and look for misunderstandings in interpreting the graphs or evaluating the expressions. An answer key is provided.

Summative Assessment:

- Distribute student resource "Summative Assessment" and have them complete the questions independently. An answer key is provided.

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Preassessment

Evaluate each expression for the given value of the variable.

1. $n + 5$ for $n = 20$

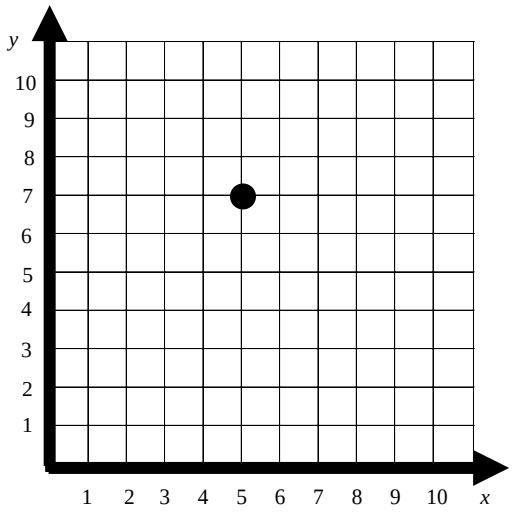
2. $8p$ for $p = 6$

3. $t + 12$ for $t = 25$

4. Complete the function table below.

Rule: ***x* - 4**	
x	***y***
5	?
8	?
10	?
12	?
14	?

5. Determine the ordered pair represented by the point below.



Preassessment Answer Key

Evaluate each expression for the given value of the variable.

1. $n + 5$ for $n = 20$ **25**

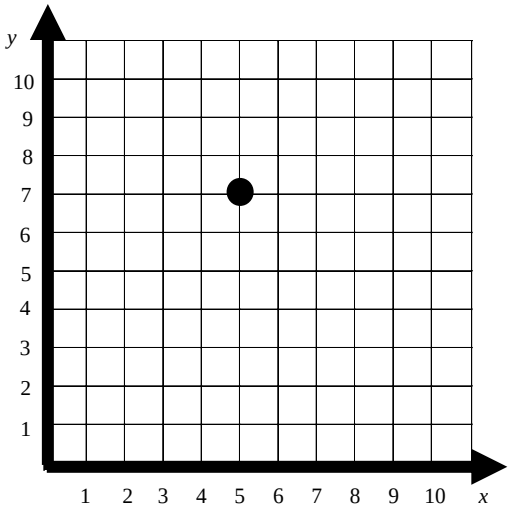
2. $8p$ for $p = 6$ **48**

3. $t + 12$ for $t = 25$ **37**

4. Complete the function table below.

Rule: ***x* - 4**	
x	***y***
5	**1**
8	**4**
10	**6**
12	**8**
14	**10**

5. Determine the ordered pair represented by the point below. **(5, 7)**



Tickets

Ticket

Ticket

Ticket

Ticket

Ticket

Ticket

Ticket

Ticket

Ticket

Ticket

SPONGE TOSS TABLE

Rule:	
Number of hits **(*x*)**	**Number of tickets** **(*y*)**
0	0
1	5
3	15
4	
5	
7	

SPONGE TOSS TABLE

Answer Key

Rule: **5*X***	
Number of hits (*x*)	**Number of tickets (*y*)**
0	0
1	5
3	15
4	**20**
5	**25**
7	**35**

Function

A relationship in which every value of x has a unique value for y.

Expression

A variable, number, or combination of variables, numbers and operational symbols used to show a mathematical relationship ($3x$).

Equation

A mathematical statement of equality between two expressions ($x - 1 = y$)

Variable

A letter or symbol that represents one or more numbers.

Function Table Practice

Rule: $x + 5$	
x	y
1	
3	
5	
7	

Rule: $3x$	
x	y
1	
2	
3	
4	

Rule: $x + 7$	
x	y
1	
2	
3	
4	

Rule: $4x + 5$	
x	y
0	
2	
5	
7	

Rule: $6x - 2$	
x	y
3	
6	
8	
10	

Rule: $8x \div 8$	
x	y
1	
2	
3	
4	

Function Table Practice Answer Key

Rule: $x + 5$	
x	y
1	**6**
3	**8**
5	**10**
7	**12**

Rule: $3x$	
x	y
1	**3**
2	**6**
3	**9**
4	**12**

Rule: $x + 7$	
x	y
1	**8**
2	**9**
3	**10**
4	**11**

Rule: $4x + 5$	
x	y
0	**5**
2	**13**
5	**25**
7	**32**

Rule: $6x - 2$	
x	y
3	**16**
6	**34**
8	**46**
10	**58**

Rule: $8x \div 8$	
x	y
1	**1**
2	**2**
3	**3**
4	**4**

$x - 1$	$5x - 2$	x
$x + 1$	$x + 2$	$x + 3$
$5x$	$2x$	$10x$
$10x + 1$	$2x + 1$	$2x + 2$

Input (x)	Output (y)
1	10
2	20
3	30

Input (x)	Output (y)
1	5
2	10
3	15

Input (x)	Output (y)
1	1
2	2
3	3

Input (x)	Output (y)
1	4
2	6
3	8

Input (x)	Output (y)
1	3
2	8
3	13

Input (x)	Output (y)
1	3
2	4
3	5

Input (x)	Output (y)
1	2
2	4
3	6

Input (x)	Output (y)
1	4
2	5
3	6

Input (x)	Output (y)
1	11
2	21
3	31

Input (x)	Output (y)
1	3
2	5
3	7

Input (x)	Output (y)
1	2
2	3
3	4

Input (x)	Output (y)
1	0
2	1
3	2

Input (x)	Output (y)

Input (x)	Output (y)

Input (x)	Output (y)

Input (x)	Output (y)

Input (x)	Output (y)

Input (x)	Output (y)

Input (x)	Output (y)

Input (x)	Output (y)

Input (x)	Output (y)

Input (x)	Output (y)

Input (x)	Output (y)

SNACK BAR SAVINGS

The Playworld Amusement Park has issued coupons in the newspaper. The coupon gives the bearer $4 off at any of the snack bars in the park. Complete the table below for the given values. Then add a few values for X and its corresponding value for y.

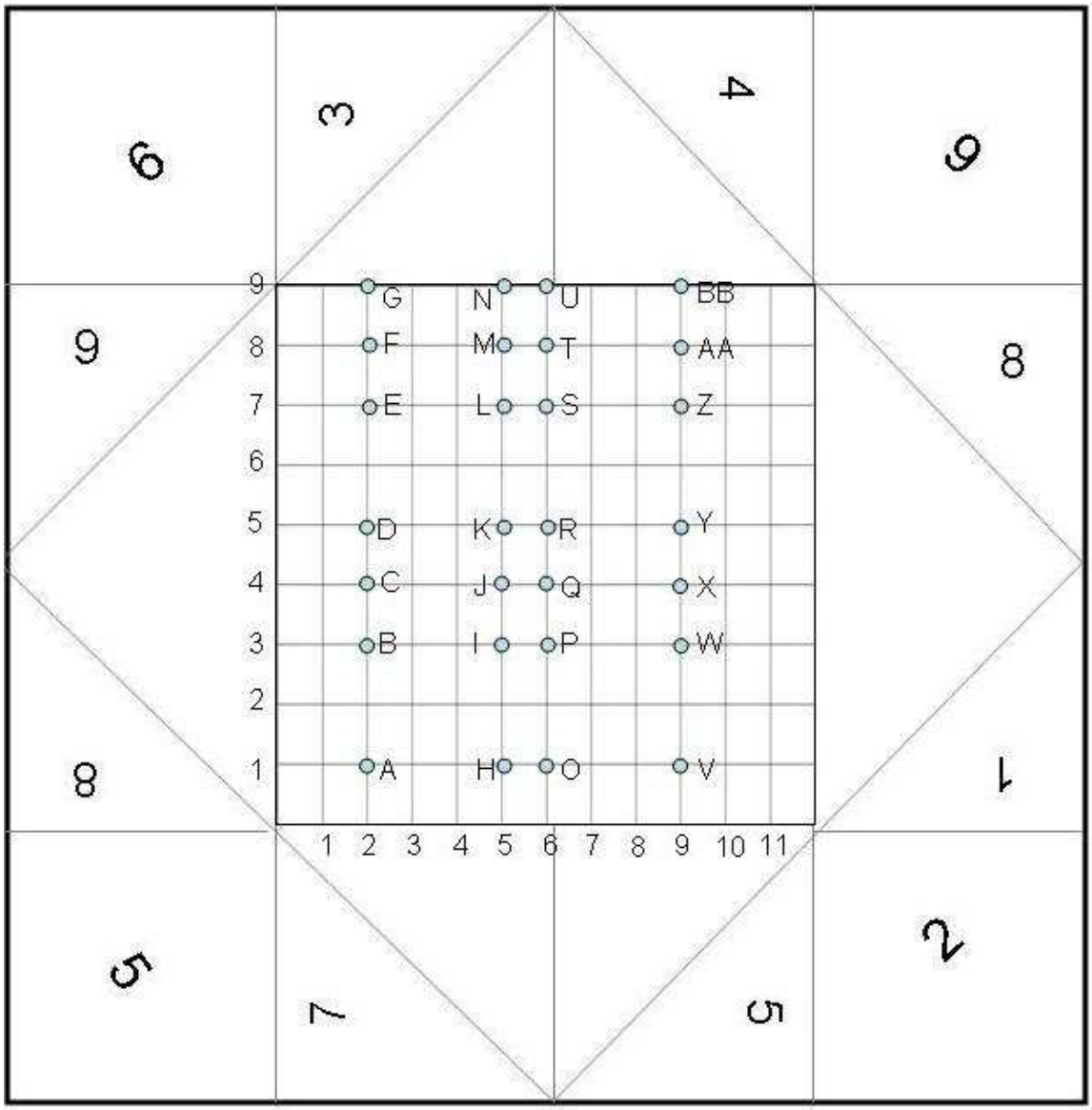
Rule: ***x* - 4**	
x	***y***
$8	?
$11	?
$15	?

SNACK BAR SAVINGS ANSWER KEY

The Playworld Amusement Park has issued coupons in the newspaper. The coupon gives the bearer $4 off at any of the snack bars in the park. Complete the table below for the given values. Then add a few values for *x* and its corresponding value for *y*.

Rule: ***x* - 4**	
x	***y***
$8	4
$11	7
$15	11

Fortune Teller



FORTUNE TELLER DIRECTIONS

1. If you start with a standard sheet of paper you will need to make it square by folding one corner over to the edge and cutting off the extra flap.
2. Unfold it and you have a square. Fold the other corners and crease again.
3. Unfold so you are back to the square.
4. Next, fold each corner point into the center of the creases.
5. Next, flip it over and fold all four corners points into the center again.
6. Lift up the flaps and write the fortunes under here.
7. Flip it back over and stick your two thumbs and two forefingers into each of the 4 flap pockets. You may need to crease it along the flap lines first. Fingers should press center creases so that all 4 flaps meet at a point in the center.

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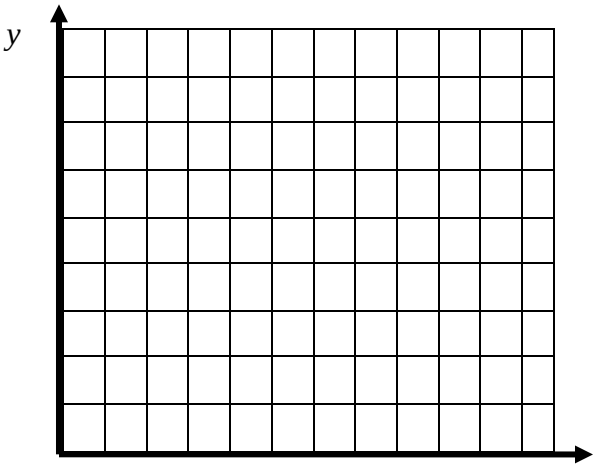
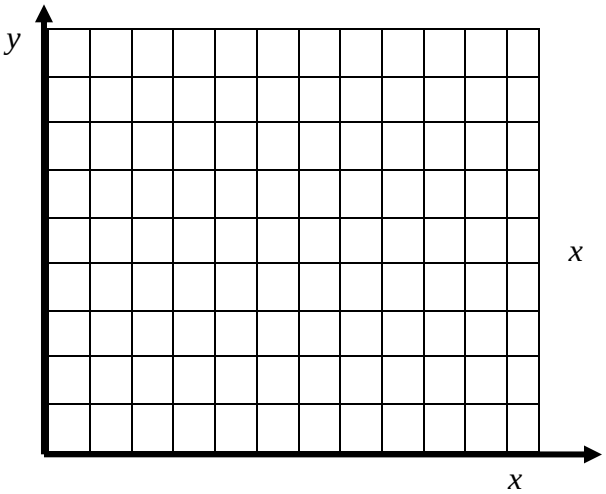
BLANK COORDINATE GRID

FUNCTION TABLE GRAPHING PRACTICE

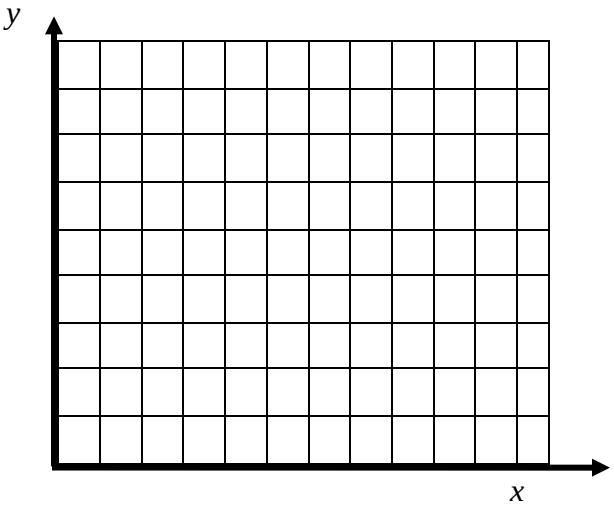
Rule: $x + 7$	
x	***y***
1	
2	
3	
4	



Rule: $6x - 2$	
x	***y***
3	
6	
8	
10	

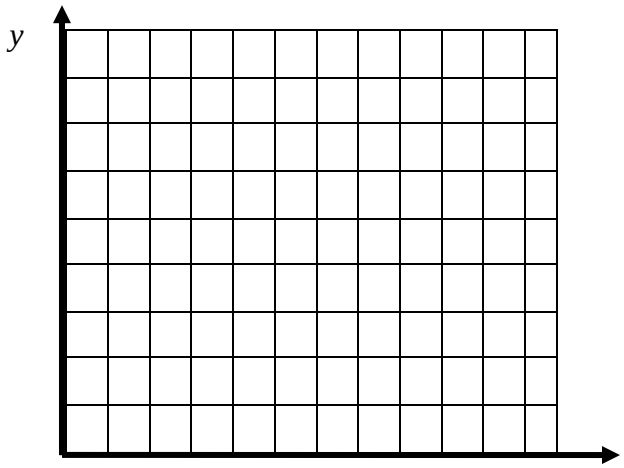


Rule: $4x + 5$	
x	***y***
0	
2	
5	
7	

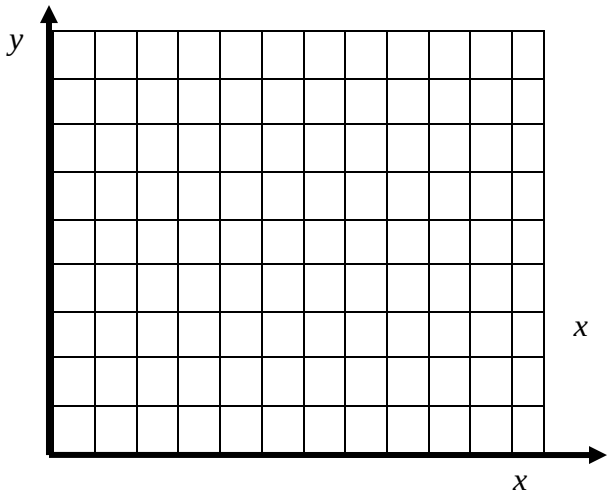


FUNCTION TABLE GRAPHING PRACTICE ANSWER KEY

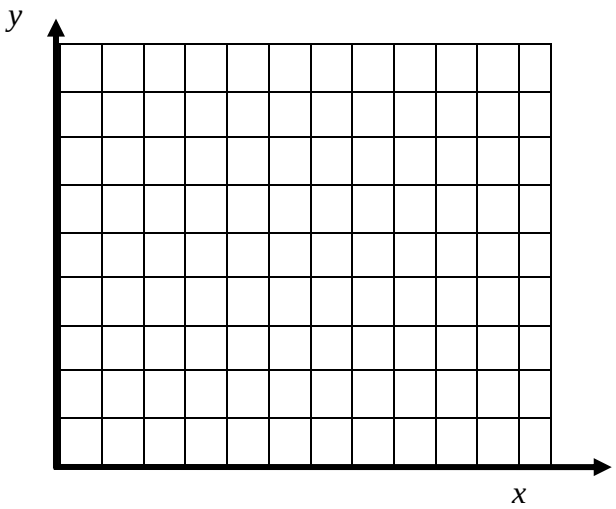
Rule: $x + 7$	
x	***y***
1	**8**
2	**9**
3	**10**
4	**11**



Rule: $6x - 2$	
x	***y***
3	**16**
6	**34**
8	**46**
10	**58**



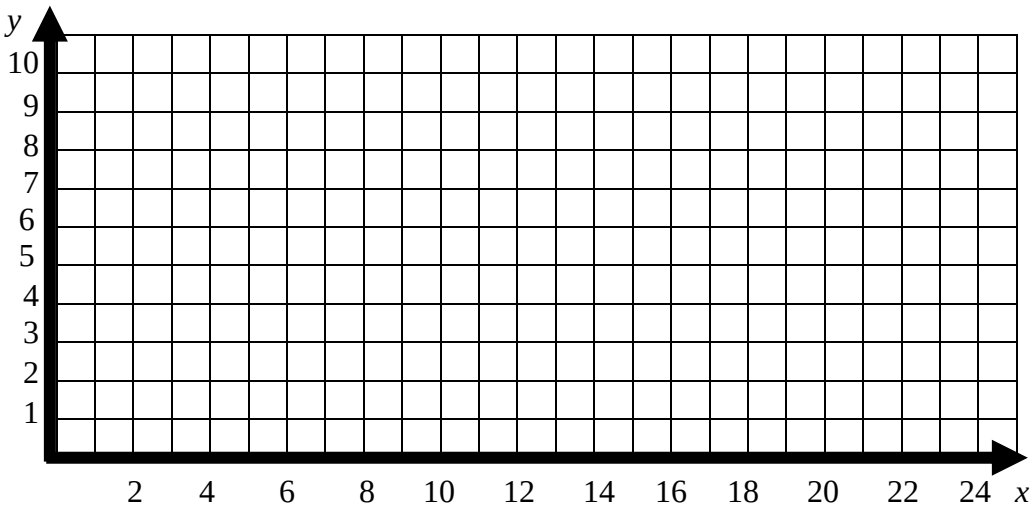
Rule: $4x + 5$	
x	***y***
0	**5**
2	**13**
5	**25**
7	**33**



Flyin' Frog

Use the expression $x \div 4$ to solve for y, the number of cars. Then graph the ordered pairs on the coordinate plane below the function table.

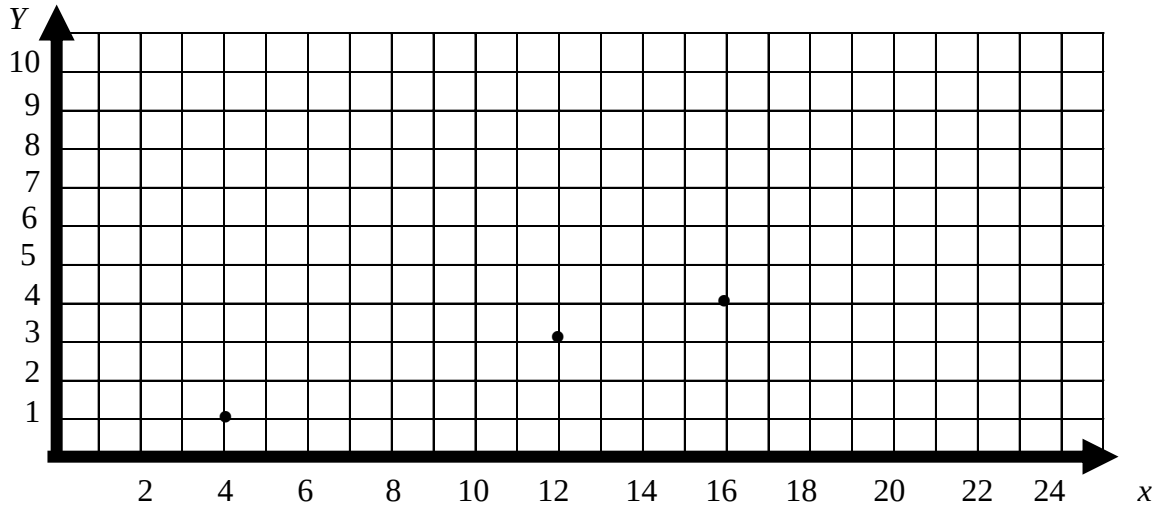
Rule: $x \div 4$	
x Number of people	***y*** Number of cars
4	
12	
16	



Flyin' Frog Answer Key

Use the expression x ÷ 4 to solve for y, the number of cars. Then graph the ordered pairs on the coordinate plane below the function table.

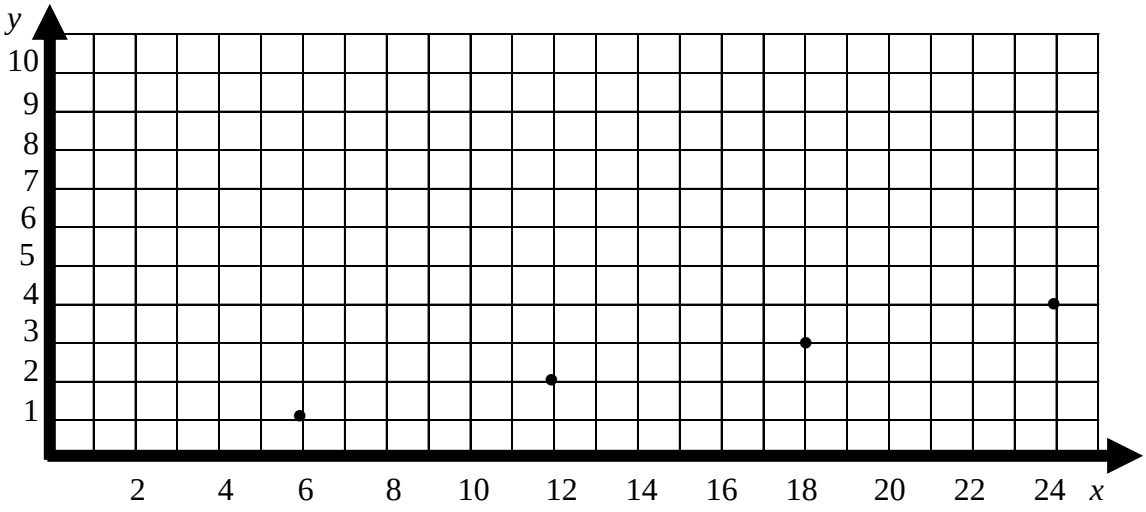
Rule: ***x* ÷ 4**	
x Number of people	***y*** Number of cars
4	**1**
12	**3**
16	**4**



Jumpin' Jackrabbit

The ordered pairs are already graphed. Complete the function table from the coordinate plane.

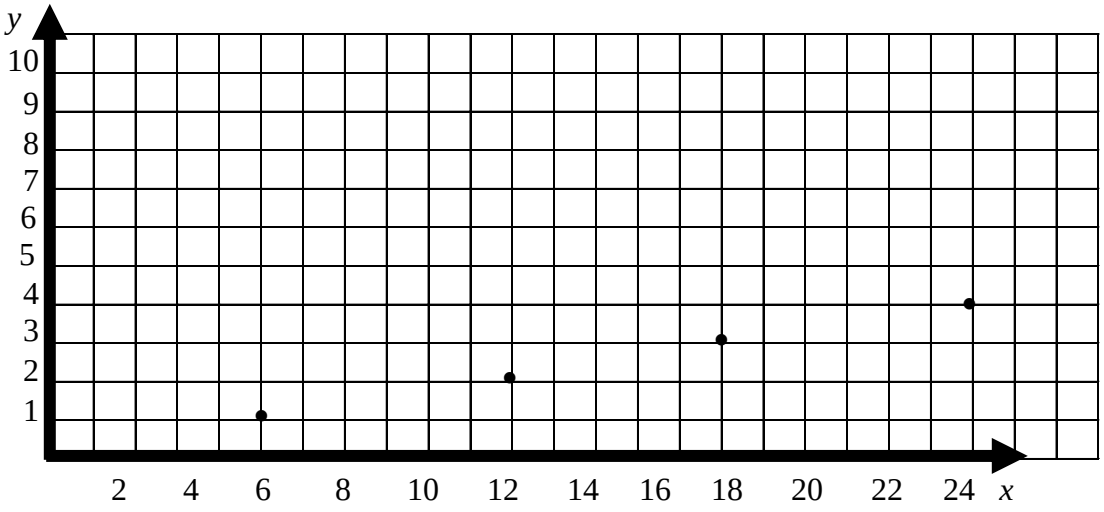
Rule: ***x* ÷ 6**	
x Number of people	***y*** Number of cars



Jumpin' Jackrabbit Answer Key

The ordered pairs are already graphed. Complete the function table from the coordinate plane.

Rule: ***x* ÷ 6**	
x Number of people	***y*** Number of cars
6	**1**
12	**2**
18	**3**
24	**4**



Crazy Ray's Dance Machine

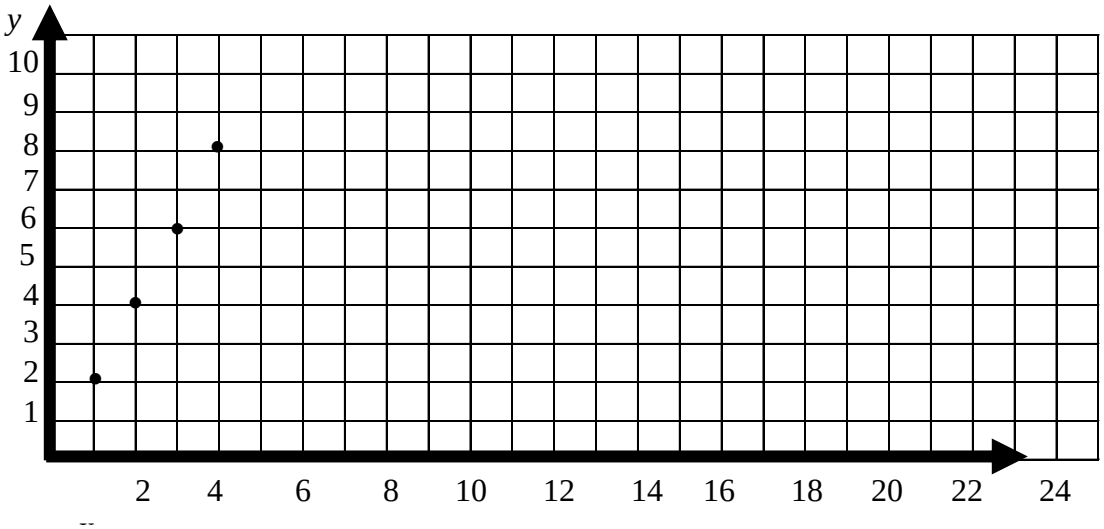
Look at the four function tables and one coordinate plane with values graphed. Choose the table that produced the values shown on the graph.

Rule: ***x* + 4**	
x	***y***
1	5
2	6
3	7
4	8

Rule: ***5x***	
x	***y***
1	5
2	10
3	15
4	20

Rule: ***2x***	
x	***y***
1	2
2	4
3	6
4	8

Rule: ***x + 8***	
x	***y***
1	9
2	10
3	11
4	12



Crazy Ray's Dance Machine Answer Key

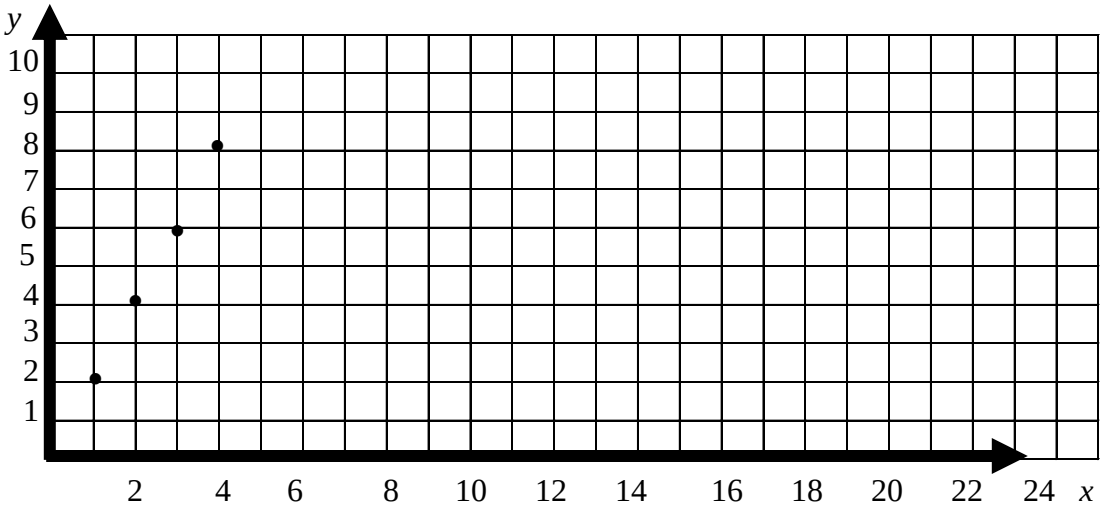
Look at the four function tables and one coordinate plane with values graphed. Choose the table that produced the values shown on the graph.

Rule: $x + 4$	
x	y
1	5
2	6
3	7
4	8

Rule: $5x$	
x	y
1	5
2	10
3	15
4	20

Rule: $2x$	
x	y
1	2
2	4
3	6
4	8

Rule: $x + 8$	
x	y
1	9
2	10
3	11
4	12



Playworld

Amusement parks charge for their services differently. You are going to pretend you are going to Playworld. Playword charges $20 for every entry and $3 per ticket. Solve for the total cost (y) and then graph the ordered pairs from your function table on the coordinate plane.

Rule: **$20 + $3*x***	
x **Number of tickets**	***y*** **Cost**
3	
5	
9	
15	

Supertown

Amusement parks charge for their services differently. You are going to pretend you are going to Supertown. Supertown charges $40 for each entry and $1 per ticket. Solve for the total cost (y) and then graph the ordered pairs from your function table on the coordinate plane.

Rule: **$40 + $1*x***	
x **Number of tickets**	***y*** **Cost**
3	
5	
9	
15	

Playworld Answer Key

Amusement parks charge for their services differently. You are going to pretend you are going to Playworld. Playword charges $20 for every entry and $3 per ticket. Solve for the total cost (y) and then graph the ordered pairs from your function table on the coordinate plane.

Rule: **$20 + $3*x***	
x **Number of tickets**	***y*** **Cost**
3	**$29**
5	**$35**
9	**$47**
15	**$65**

Supertown

Amusement parks charge for their services differently. You are going to pretend you are going to Supertown. Supertown charges $40 for each entry and 1 per ticket. Solve for the total cost (y) and then graph the ordered pairs from your function table on the coordinate plane.

Rule: **$40 + $1*x***	
x **Number of tickets**	***y*** **Cost**
3	**$43**
5	**$45**
9	**$49**
15	**$55**

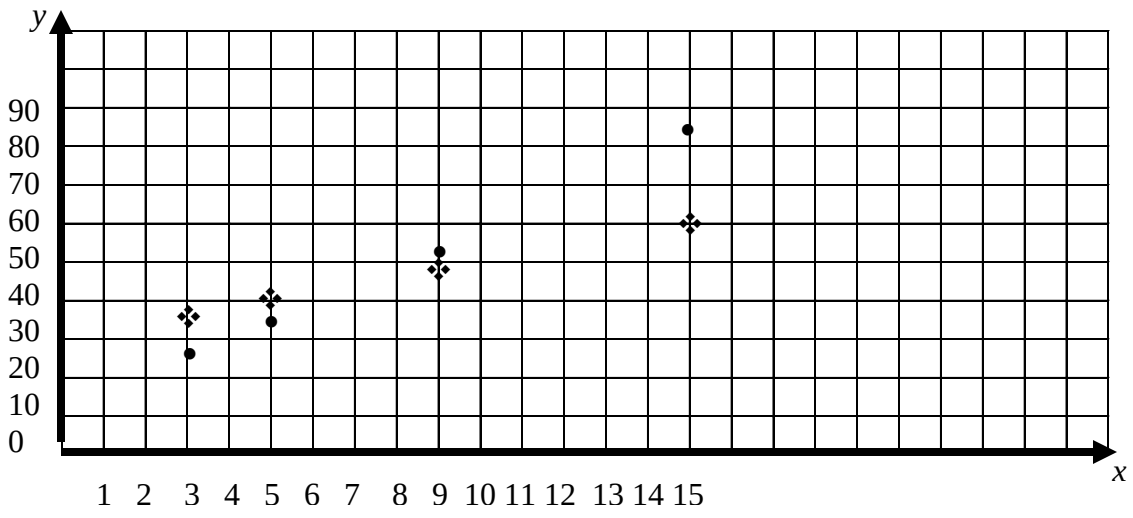
Wonderworld vs. Laughland

Wonderworld

Rule: **$10 + $5*x***	
x **Number of tickets**	***y*** **Cost**
3	$25
5	$35
9	$55
15	$85

Laughland

Rule: **$30 + $2*x***	
x **Number of tickets**	***y*** **Cost**
3	$36
5	$40
9	$48
15	$60



- • Wonderworld
- ❖ Laughland

Name_____

Parking Rates

Directions: Evaluate each expression for the *y* value. Then graph each set of coordinates on the grid below. Use different symbols or colors for each function table so you can tell the graphs apart. Be prepared to discuss which lot is the better deal!

Green Lot

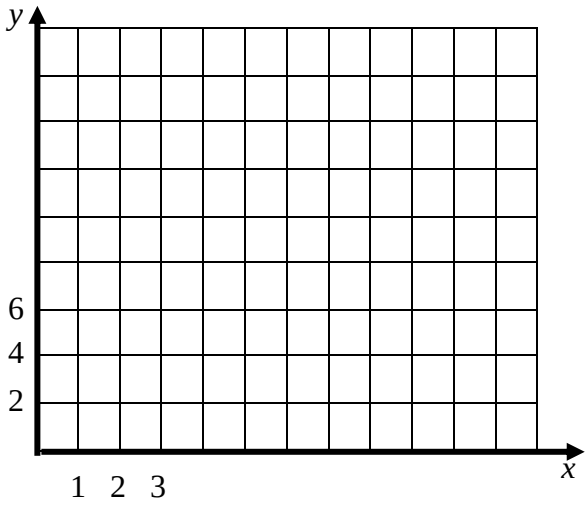
$20 dollars per day, unlimited time. Carpool!!! Each person in the car saves $2 off your charges!

$20 – $2*x*	
x (people)	*y (cost)*
1	
2	
5	
6	

Blue Lot

Cheap!! Only $5 to enter the lot and $2 dollars for every person in your car!!

$5 + $2*x*	
x (people)	*y (cost)*
1	
4	
5	
7	



Name_____ **Answer Key**

Parking Rates

Directions: Evaluate each expression for the y value. Then graph each set of coordinates on the grid below. Use different symbols or colors for each function table so you can tell the graphs apart. Be prepared to discuss which lot is the better deal!

Green Lot

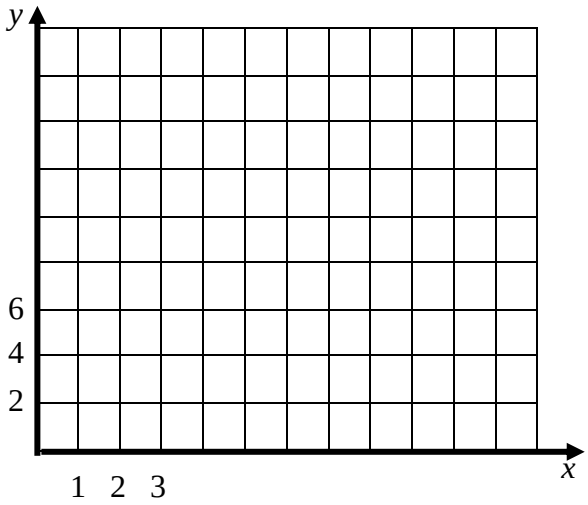
$20 dollars per day, unlimited time. Carpool!!! Each person in the car saves $2 off your charges!

$20 – $2*x*	
x (people)	*y (cost)*
1	$18
2	$16
5	$10
6	$8

Blue Lot

Cheap!! Only $5 to enter the lot and $2 dollars for every person in your car!!

$5 + $2*x*	
x (people)	*y (cost)*
1	$7
4	$13
5	$15
7	$19



A Friendly Suggestion

Your friend, Freddy, is headed to Playworld for a day. His mom and dad are excited about the roller-coasters while his little brother and sister are both looking forward to the water rides.

Write a friendly letter to Freddy suggesting which parking lot they should choose to park their car to spend the least amount of money. Be sure to explain why the lot you chose is the least expensive choice and support your answer with mathematical proof!

Dear Freddy,

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Your friend,

A Friendly Suggestion

Your friend, Freddy, is headed to Playworld for a day. His mom and dad are excited about the roller-coasters, while his little brother and sister are both looking forward to the water rides.

Write a friendly letter to Freddy suggesting which parking lot they should choose to park their car to spend the least amount of money. Be sure to explain why the lot you chose is the least expensive choice and support your answer with mathematical proof!

Dear Freddy,

Sample response – Dear Freddy,

I think you will have a great time at the park with your family. My favorite ride is the Whip-r-Snap-r. I love how dizzy I feel when I get off! I just wanted to let you know that when you go, you should definitely park in the Green Lot. Since there are 5 of you going, you will only spend $10 to park. Each person in your car gets a $2 discount off of the $20 entry, so it will only cost $10!! I know the Blue Lot looks better because it is only $5 to get in, but it will cost another $10 for all of the people in your car. It will save your mom and dad $5 if you go to the Green Lot. Maybe your parents will let you keep the money you save them!!

Your friend,

Name _____

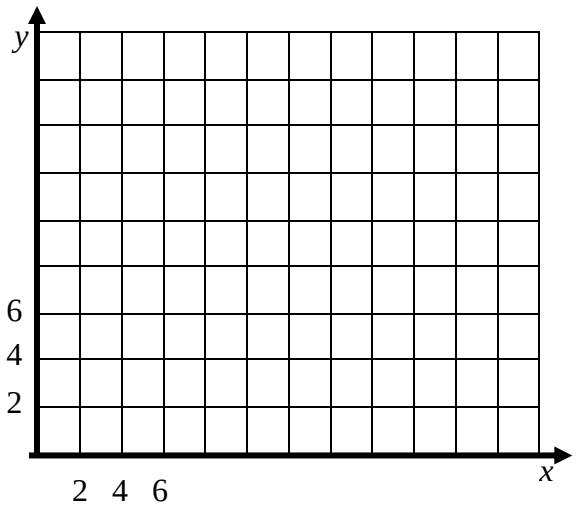
Summative Assessment

1. Mr. Smith's class plays a version of the Sponge Toss Game where each "hit" scores 6 tickets. Complete the function table to show the number of tickets for the given number of hits.

Rule = $6x$	
x hits	*y tickets*
3	
5	
6	
10	

2. Playworld is building a new parking lot. It costs \$8 to get in, and \$2 for every hour you stay. Label the axes of the coordinate plane and then solve for each value of x. Finally, plot the ordered pairs on the coordinate plane.

$10 + 3x	
x hours	*y dollars*
2	
4	
5	
8	



3. Use the function tables and graphs on the coordinate plane below to answer number three.

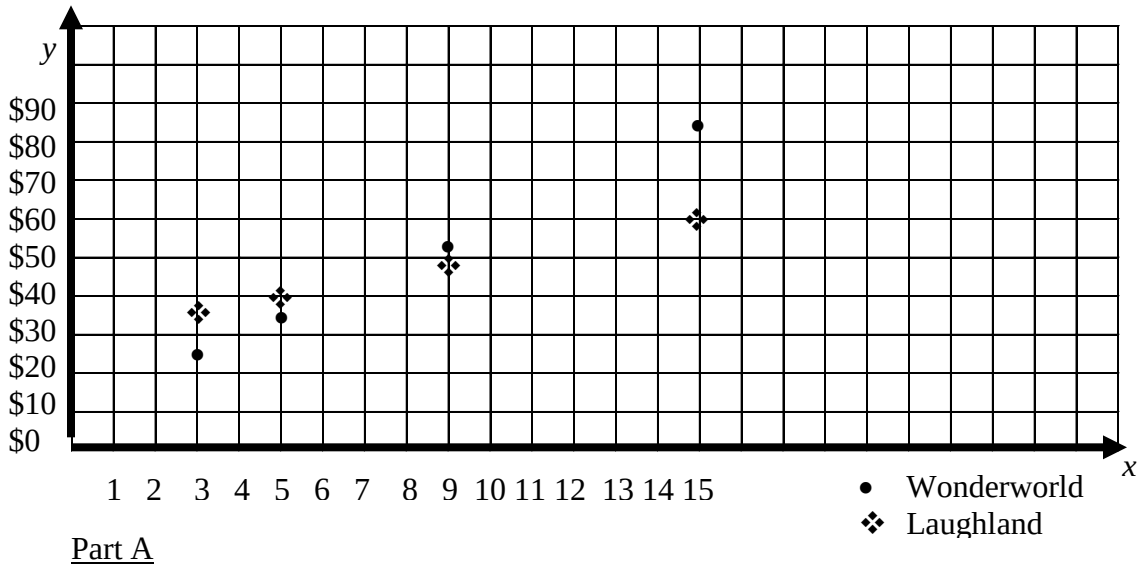
Jenny was given money to go to the amusement park for her birthday, but she needs help deciding between Wonderworld or Laughland. She *loves* the rides, but she *hates* to waste her money.

Wonderworld

Rule: **$10 + $5*x***	
x **Number of tickets**	***y*** **Cost**
3	$25
5	$35
9	$55
15	$85

Laughland

Rule: **$30 + $2*x***	
x **Number of tickets**	***y*** **Cost**
3	$36
5	$40
9	$48
15	$60



Part A

Which park should Jenny visit? _____

Part B

Explain how you know your answer is correct. Use what you know about graphing expressions to explain your answer. Use words, numbers, and/or symbols to support you answer.

_____

_____

_____

_____

_____

Name _____

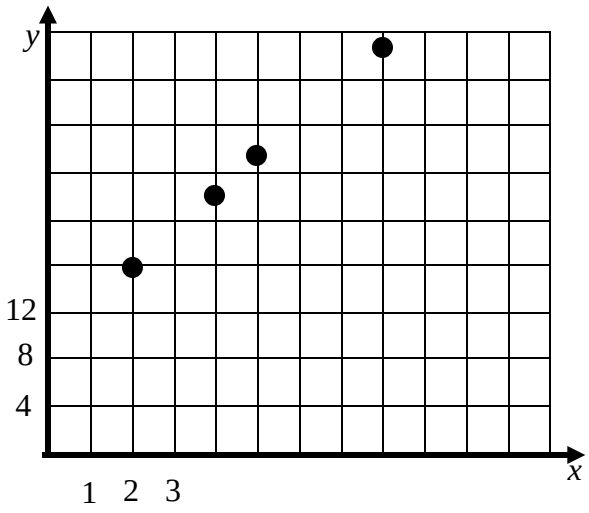
Summative –Assessment Answer Key

1. Mr. Smith's class plays a version of the Sponge Toss Game where each "hit" scores 6 tickets. Complete the function table to show the number of tickets for the given number of hits.

Rule = 6*x*	
x hits	*y tickets*
3	18
5	30
6	36
10	60

2. Playworld is building a new parking lot. It costs $8 to get in, and $2 for every hour you stay. Label the axes of the coordinate plane and then solve for each value of *x*. Finally, plot the ordered pairs on the coordinate plane.

$10 + 3*x*	
x hours	*y dollars*
2	16
4	22
5	25
8	34



3. Use the function tables and graphs on the coordinate plane below to answer number three.

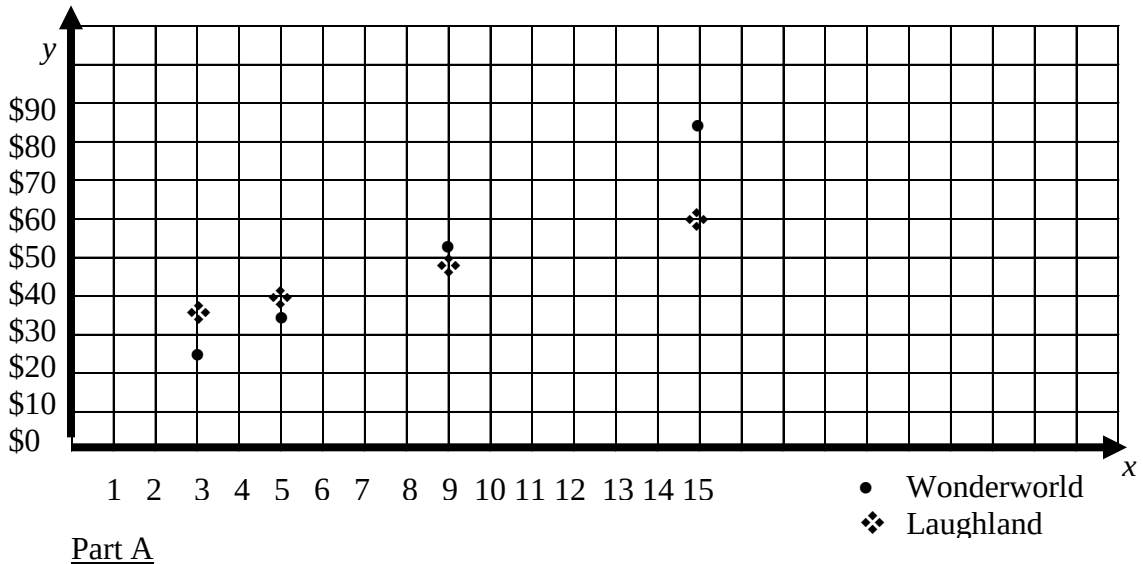
Jenny was given money to go to the amusement park for her birthday, but she needs help deciding between Wonderworld or Laughland. She *loves* the rides, but she *hates* to waste her money. She plans to purchase at least 10 tickets.

Wonderworld

Rule: **$10 + $5*x***	
x **Number of tickets**	***y*** **Cost**
3	$25
5	$35
9	$55
15	$85

Laughland

Rule: **$30 + $2*x***	
x **Number of tickets**	***y*** **Cost**
3	$36
5	$40
9	$48
15	$60



Part A

Which park should Jenny visit? Laughland

Part B

Explain how you know your answer is correct. Use what you know about interpreting a graph to explain your answer. Use words, numbers, and/or symbols to support you answer.

Answers will vary.