Fun with Functions:

Directions: Cut out each box on this paper. Look carefully at the <u>mixed up</u> boxes below and decide in which column & row they belong on the grid provided. Each needs to be classified as a linear, quadratic, absolute value, or exponential function.

Definition: A function that is graphed as a partially curved line that portrays VERY fast increase or decrease of one variable. (Growth or decay)

Definition: A function that is graphed as a straight line and has a constant rate of change (positive or negative).

Definition: A function that is graphed as a v - shape and shows only positive values for y. (Linear pattern until it reaches the vertex, then the pattern reverses in the other direction.)

Definition: A function that is graphed as a parabola (or u-shape) and shows increase and decrease of one variable.

X	Y
4	21
2	9
0	5
-2	9
-4	21

X	Y
5	33
6	30
7	27
8	24
9	21

X	Y
0	¼
1	1
2	4
3	16
4	64

X	Y
-3	0
-2	1
-1	2
0	1
1	0

Jasmine's mother tells her she can travel 3 miles from her house in either direction; East or West.

Each year Gertrude counts her tulips in her garden. Over the past few years, she has noticed a definite pattern in that the number of tulips triples each year.

Coach Cowell kicks a soccer ball in the air during gym class. He has the students measure the height of the ball from start to finish at 5 different times during the flight.
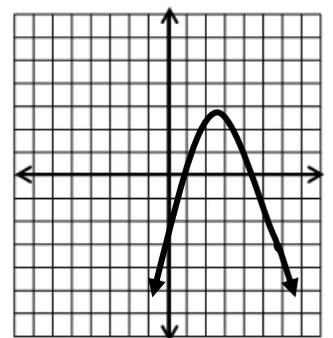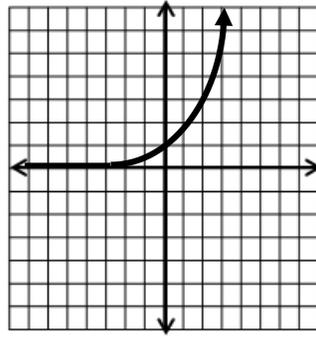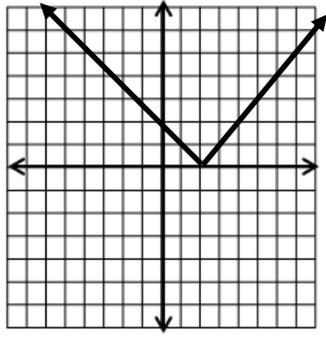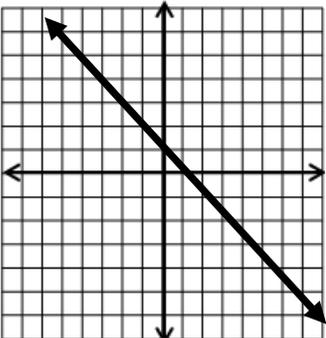
Jon currently has $45 in his wallet. He earns 2 dollars for every newspaper he sells on his route.

$$y = 5(3)^x$$

$$y = 6x^2 + 11x - 35$$

$$y = -|x + 1| + 2$$

$$y = -\frac{2}{3}x + 7$$

Fun with Functions!

Name:_____ Hour:_____

	Linear Functions	Exponential Functions	Absolute-Value Functions	Quadratic Functions
Definition				
Equation				
Real-World Situation				
Table				
Graph				

Fun with Functions!

Name: _Key_   Hour:_____

	Linear Functions	Exponential Functions	Absolute-Value Functions	Quadratic Functions
Definition	**Definition:** A function that is graphed as a straight line and has a constant rate of change (positive or negative).	**Definition:** A function that is graphed as a partially curved line that portrays VERY fast increase or decrease of one variable. (Growth or decay)	**Definition:** A function that is graphed as a v - shape and shows only positive values for y. (Linear pattern until it reaches the vertex, then the pattern reverses in the other direction.)	**Definition:** A function that is graphed as a parabola (or u-shape) and shows increase and decrease of one variable.
Equation	$y = -\dfrac{2}{3}x + 7$	$y = 5(3)^x$	$y = -\lvert x + 1\rvert + 2$	$y = 6x^2 + 11x - 35$
Real-World Situation	Jon currently has $45 in his wallet. He earns 2 dollars for every newspaper he sells on his route.	Each year Gertrude counts her tulips in her garden. Over the past few years, she has noticed a definite pattern in that the number of tulips triples each year.	Jasmine's mother tells her she can travel 3 miles from her house in either direction; East or West.	Coach Cowell kicks a soccer ball in the air during gym class. He has the students measure the height of the ball from start to finish at 5 different times during the flight.

Table

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X	Y
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-2	1
-1	2
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1	0

X	Y
4	21
2	9
0	5
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Graph