## Station 1: Graphing Stories

## Match the situations to the graphs.

1) Derman left his home and hiked slowly up a hill. He walked normally across the top, then ran quickly down the other side.
2) Derman ran to his friend's house. He hung out with his friend for a while, then walked home again.
3) Derman walked to the gas station to buy a candy bar. After he bought it, he saw a ferocious lion. Scared, he ran all the way home.
4) Derman was walking to a birthday party. When he was halfway there, he realized he'd forgotten to bring the present, so he went home to go get it. Once he got the present, he thought he might be late, so he ran all the way to the party.


Draw a graph to represent each situation. Label the x - and y -axis with the given variables.
5) You throw a ball straight up in the air. It comes back down about halfway before a bird catches it in its beak. The bird hovers in place while it tries to eat the ball, but then realizes that it isn't food, so it drops the ball to the ground.

## $x$-axis: Time $\quad y$-axis: Height of ball


6) You are driving through town at a constant rate of about 30 miles per hour. You then get on the highway, and drive at a constant rate of about 55 miles per hour. You then stop at a rest stop.
$x$-axis: Time $\quad y$-axis: Distance driven

7) You are driving through town at a constant rate of about 30 miles per hour. You then get on the highway, and drive at a constant rate of about 55 miles per hour. You then stop at a rest stop.
$x$-axis: Time $\quad y$-axis: Speed of the car


## Station 2: Is it a Function? + Evaluating Functions

For 1-5, say whether it is a function, and explain why.
1)

| Input | Output |
| :--- | :--- |
| 0 | 12 |
| 2 | 6 |
| 4 | 0 |
| 6 | 6 |
| 8 | 12 |

2) 

| Input | Output |
| :--- | :--- |
| 3 | 20 |
| 4 | 24 |
| 5 | 28 |
| 5 | 32 |
| 6 | 36 |


4)

5) Input = Person, Output = Current height of that person
6) Input = Student, Output = Letter of the row they are sitting in in Mr. Lischwe's class
7) Input = Word, Output = A vowel that is in that word
8) $f(x)=2 x+3$

Evaluate each function.
9) If ) $a(x)=-3 x+4$, find $a(7)$.
10) If $b(x)=5 x^{2}+|x|$, find $b(-3)$.

1) Tommy is buying DVD's online. Each DVD costs $\$ 15$, and there is a one-time shipping cost of $\$ 9$.
a) Complete the table:
b) What do the inputs represent?
c) What do the outputs represent?

| Input | Output |
| :--- | :--- |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |

d) Write a rule in function notation to match the situation.

$$
C(x)=
$$

$\qquad$
3) Angelica is sad - she only has 3 points on LiveSchool right now! However, she makes a commitment to do all of her homework every day, and each day, she earns 4 more points. State what the inputs and outputs represent, and write a rule in function notation. You can make a table if you feel that will help you.
2) Chuckie starts a lawn-mowing business. He is able to mow 4 lawns per day.
a) Complete the table:
b) What do the inputs represent?
c) What do the outputs represent?

| Input | Output |
| :--- | :--- |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |

d) Write a rule in function notation to match the situation.
4) Phil and Lil come to the fair with $\$ 80$ total. Each ticket they buy for a ride costs $\$ 3$. State what the inputs and outputs represent, and write a rule in function notation that would calculate how much money they have left. You can make a table if you feel that will help you.

## Station 4: Graphing Functions

For each function, complete the table (pick your own inputs if they are not given), and use it to make the graph.

1) $a(x)=|x|-5$
2) $b(x)=-2 x+5$
3) $c(x)=\frac{1}{2} x^{2}$

| $\mathbf{x}$ | $\mathbf{a}(\mathbf{x})$ |
| :--- | :--- |
| -3 |  |
| -2 |  |
| -1 |  |
| 0 |  |
| 1 |  |
| 2 |  |
| 3 |  |


| $\mathbf{x}$ | $\mathbf{b}(\mathbf{x})$ |
| :--- | :--- |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |


| $\mathbf{x}$ | $\mathbf{c}(\mathbf{x})$ |
| :--- | :--- |
| -3 |  |
| -2 |  |
| -1 |  |
| 0 |  |
| 1 |  |
| 2 |  |
| 3 |  |





