Created by Mr. Lischwe

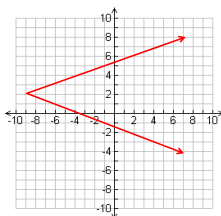## Warmup 9/(# *of feet in* 5 *yards*)

Mason has $15 in his piggy bank to start. Each month, he adds $2 to his piggy bank.

1. Create an input/output table representing this situation.
2. Write a rule that would calculate the amount of money in his piggy bank. **m(x) = 15 + 2x**
3. What do the inputs represent? **# of months**
4. What do the outputs represent? **Total amount of $ in piggy bank**

5. 8 – 13 **-5**
6. -3 + 10 **7**
7. -11 + 4 **-7**
8. -11 – 4 **-15**
9. -6 – 2 **-8**
10. 12 – 15 **-3**
11. -10 + (-4) **-14**
12. 8 – (-2) **10**
13. -12 – (-3) **-9**

Check HW

- You may not have picked the exact points as me, but your graph should have the same general shape.

- If you got one wrong, **you must fix the numbers in your table.** Then later, you can use your table to fix your graph.

- You will not turn this one in – it should stay as page 8 in your binder.

- I am going to grade this one just based on completion. I have already written down how much each person did!!!

Is this a function?

ONE IMPORTANT THING TO NOTICE…

- Did any of your graphs turn out to **NOT BE FUNCTIONS?**

- Why do you think this happened???

More "Guess my rule"

Table of Contents

Linear vs. Nonlinear Functions

Objectives:
-Predict if an equation will be linear or nonlinear
-Predict if a table will be linear or nonlinear
-Learn a strategy to help figure out a rule

PATTERNS…

f(x) = 4x

x	f(x)
1	
2	
3	
4	
5	

g(x) = 4x + 5

x	g(x)
1	
2	
3	
4	
5	

h(x) = 4x – 2

x	h(x)
1	
2	
3	
4	
5	

j(x) = -5x + 20

x	j(x)
1	
2	
3	
4	
5	

k(x) = 7x – 3

x	k(x)
1	
2	
3	
4	
5	

l(x) = 100x + 5

x	l(x)
1	
2	
3	
4	
5	

EXTREMELY IMPORTANT PATTERN:
- If your outputs increase by a certain number, that is the "multiplying" number in the equation.
  ◦ Outputs increase by 4 → Rule has a "4x"
  ◦ Outputs decrease by 2 → Rule has a "-2x"

- NOTE: This only works if your inputs are consecutive numbers.

So, how does this help me with "guess my rule???"
- Guess consecutive numbers!!!

Can you get these rules???

1)

x	a(x)
1	4
2	7
3	10
4	13
5	16

a(x) = 3x + 1

2)

x	b(x)
5	15
6	20
7	25
8	30
9	35

b(x) = 5x – 10

3)

x	c(x)
-2	-7
-1	-5
0	-3
1	-1
2	1

c(x) = 2x – 3

4)

x	d(x)
0	10
1	6
2	2
3	-2
4	-6

d(x) = -4x + 10

HOMEWORK
- 30 minutes of ALEKS