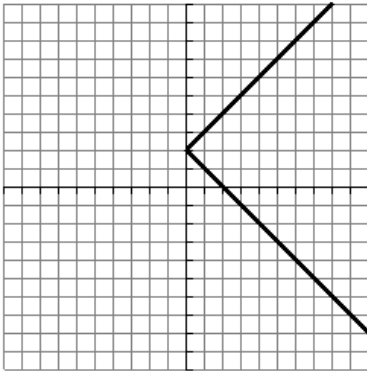


Unit 2 Study Guide

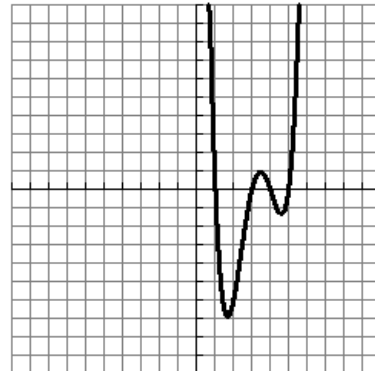
Graphs

Determine whether the relationship is a function or not. If not a function, **show** why not on the graph.

1. Function: YES NO

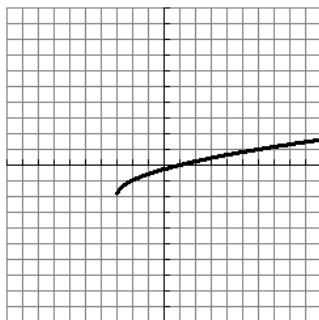


2. Function: YES NO

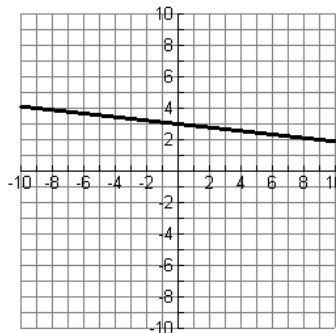


Identify the type of function as LINEAR, ABSOLUTE VALUE, QUADRATIC, EXPONENTIAL, or OTHER.

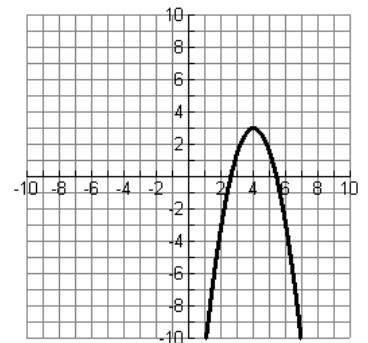
3. _____



4. _____

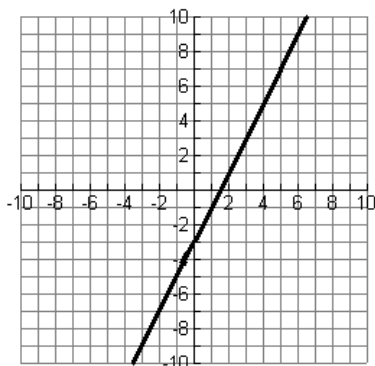


5. _____

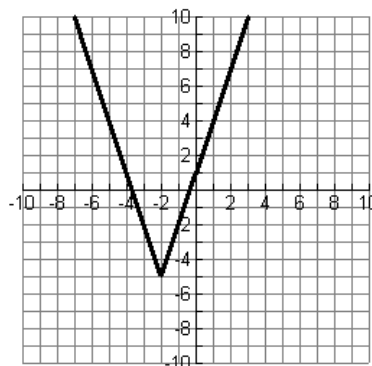


Compare and contrast the graphs below using the following language: **INCREASING, DECREASING, NOT INCREASING OR DECREASING, MAXIMUM VALUE, MINIMUM VALUE, ASYMPTOTE, & RATE OF CHANGE**. Please write in complete sentences.

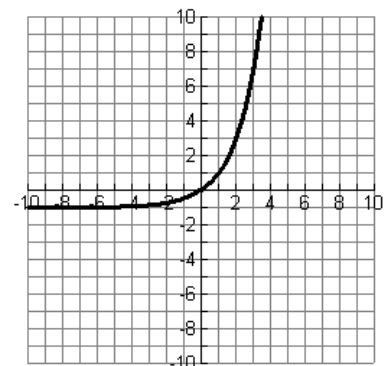
Graph A



Graph B



Graph C



Give one similarity and one difference between Graphs A and B.

One Similarity	One Difference
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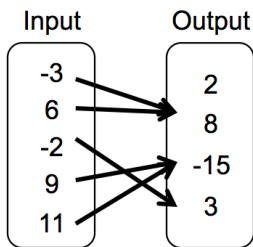
Give one similarity and one difference between Graphs A and C.

One Similarity	One Difference
----------------	----------------

Tables

Determine if the relation is a function or not a function. If the relation is not a function, explain why using a complete sentence.

6. Function: YES NO



7. Function: YES NO

x	y
5	2
7	3
8	3
10	2
13	1
5	0

If not a function, why not?

If not a function, why not?

Identify the type of function as LINEAR, ABSOLUTE VALUE, QUADRATIC, EXPONENTIAL, or OTHER.

Explain how you know using a complete sentence.

8. _____

x	y
-2	-2
-1	-1
0	1
1	5
2	13
3	29

9. _____

x	y
0	-18
1	-14
2	-10
3	-6
4	-10

10. _____

x	y
0	-2
1	-1
2	2
3	7
4	14

Compare and contrast $f(x)$ and $g(x)$ using the following language: **INCREASING, DECREASING, NOT INCREASING OR DECREASING, & RATE OF CHANGE**. Please write in complete sentences.

Give one similarity and one difference between the tables in questions #8 and #9.

One Similarity	One Difference
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Give one similarity and one difference between the tables in questions #9 and #10.

One Similarity	One Difference
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Equations

Identify the type of function as LINEAR, ABSOLUTE VALUE, QUADRATIC, EXPONENTIAL, or OTHER.

11. $y = \frac{2}{5}x$

13. $y = 2x^6 + x^3 + 9$

15. $y = -x^2 + 3$

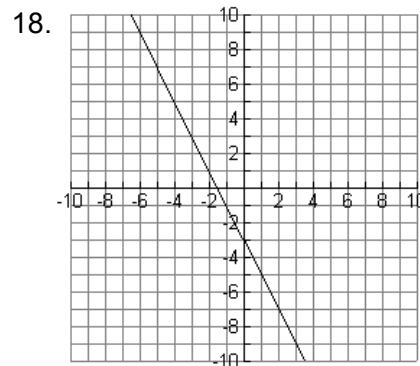
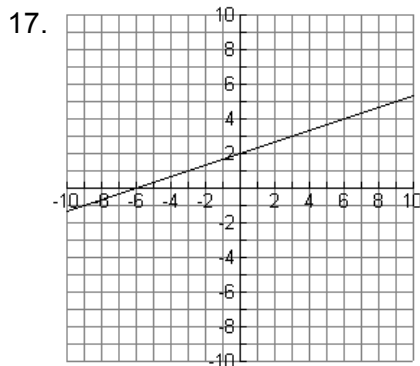
12. $y = 2.5^x - 10$

14. $y = \left(\frac{4}{3}\right)^{x-3} - 1$

16. $y = 3|x| + 7$

Rates of Change

Identify the rate of change for each graph below.



Rate of Change: _____

Rate of Change: _____

Prove that the following tables are linear. Then, give the rate of change.

19.

x	y
-5	-21
-3	-13
1	3
4	15
10	39

Rate of Change: _____

20.

x	y
-9	3
-6	4
0	6
3	7
12	10

Rate of Change: _____

Context

Determine if the following problems represent a linear relationship. If so, find the rate of change and answer the questions that follow. If not, prove using data from the problem.

21. Use the Fuddruckers hamburger menu to answer the following questions

WORLD'S GREATEST HAMBURGERS*

The Original

1/3 LB	1/2 LB	2/3 LB	1 LB
4.65	5.50	7.50	9.50



Is this relationship between hamburger size and price linear? **SHOW** why or why not.

IF LINEAR, describe the rate of change in words and predict the cost of a two-pound hamburger.

22. You are thinking about college and the one you would really like to attend currently costs \$45,000 per year for all of the tuition and fees. The cost is predicted to raise by 15% each year.

Is this relationship between the year and the cost of college linear? **SHOW** why or why not.

IF LINEAR, describe the rate of change in words and predict the amount of money you will have to pay for college when you graduate in three years.

23. A doctor prescribes for you to take 200mg of Tylenol the first time (at 0 hours) and then 100 mg every 4 hours for the rest of the day.

Does the amount of Tylenol you take over the course of the day represent a linear relationship? **SHOW** why or why not.

IF LINEAR, describe the rate of change in words and predict the TOTAL amount of Tylenol you will have taken over 16 hours.