

Functions: Linear, Exponential, and Quadratic

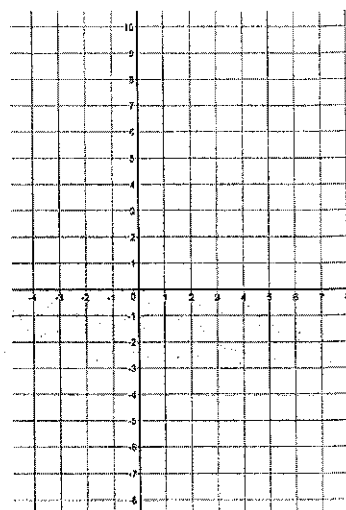
We have studied many types of functions this year! For each function, complete the table, graph, identify the type of equation, and then describe the pattern you find in the y-values of your table.

1. $y = 3x - 2$

x	y
-1	
0	
1	
2	
3	

Is the equation: linear, exponential, or quadratic?

Describe the pattern you find in the y-values of the table:

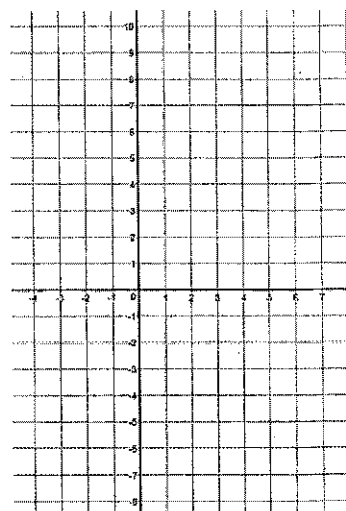


2. $y = x^2 - 4x + 5$

x	y
1	
2	
3	
4	
5	

Is the equation: linear, exponential, or quadratic?

Describe the pattern you find in the y-values of the table:

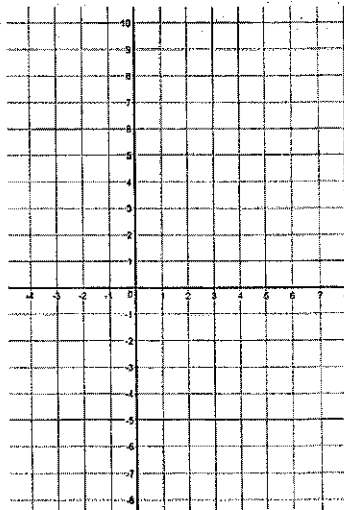


3. $y = 3^x$

x	y
-2	
-1	
0	
1	
2	

Is the equation: linear, exponential, or quadratic?

Describe the pattern you find in the y-values of the table:



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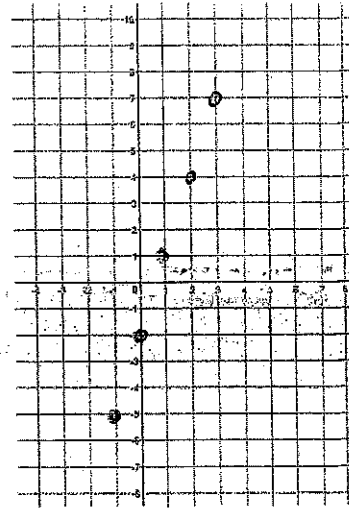
x	y
-1	-5
0	-2
1	1
2	4
3	7

add 3 each time

Is the equation: linear, exponential, or quadratic?

Describe the pattern you find in the y-values of the table:

The 1st differences are constant



2. $y = x^2 - 4x + 5$

x	y
1	2
2	1
3	2
4	5
5	10

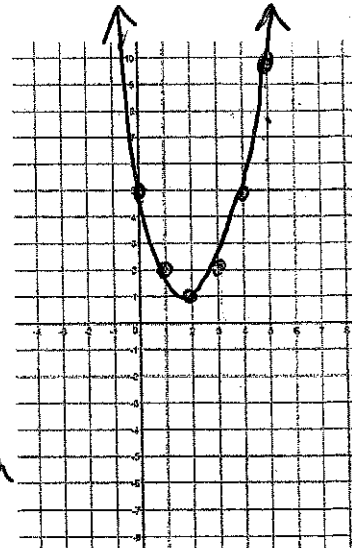
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Is the equation: linear, exponential, or quadratic?

x^2 : Parabola

Describe the pattern you find in the y-values of the table:

The 2nd differences are constant.



3. $y = 3^x$

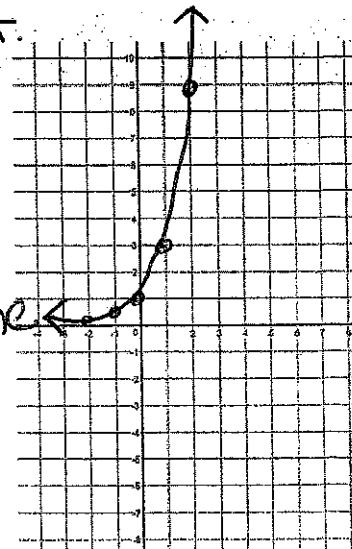
x	y
-2	1/9
-1	1/3
0	1
1	3
2	9

Exponential - multiplying by same # each time

Is the equation: linear, exponential, or quadratic?

Describe the pattern you find in the y-values of the table:

ratio of the y-values are the same



x	y
1	2
2	4
3	8
4	16

mult. by
Same #
exponential

x	y
1	-3
2	-1
3	1
4	3

1st diff.
Same
linear

x	y
1	12
2	19
3	28
4	39

2nd diff.
Same
Quadratic.