

Bellwork Alg 2 Wednesday, Sept. 4, 2019

Fill in each table to explore the rates of change for each function.

1. Linear Function:

2. Quadratic Function:

X	$y=2x+1$	1st Difference in y
1		
2		
3		
4		
5		
6		
7		
8		

X	$y=3x^2$	1st Difference in y	2nd Difference in y
1			
2			
3			
4			
5			
6			
7			
8			

Work on the back too!!

3. Cubic Function:

X	$y=2x^3$	1st Difference in y	2nd Difference in y	3rd Difference in y
1				
2				
3				
4				
5				
6				
7				
8				

4. Exponential Function

X	$y=5(2)^x$	1st Difference in y	2nd Difference in y
1			
2			
3			
4			
5			
6			
7			
8			

What do you notice about the Rates of Change (differences in y) for these four functions?

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ANSWERS

Fill in each table to explore the rates of change for each function.

1. Linear Function:

2. Quadratic Function:

X	$y=2x+1$	1st Difference in y
1	3	
		2
2	5	
		2
3	7	
		2
4	9	
		2
5	11	
		2
6	13	
		2
7	15	
		2
8	17	

X	$y=3x^2$	1st Difference in y	2nd Difference in y
1	3		
		9	
2	12		6
		15	
3	27		6
		21	
4	48		6
		27	
5	75		6
		33	
6	108		6
		39	
7	147		6
		45	
8	192		

Work on the back too!!

3. Cubic Function:

X	$y=2x^3$	1st Difference in y	2nd Difference in y	3rd Difference in y
1	2			
		14		
2	16		24	
		38		12
3	54		36	
		74		12
4	128		48	
		122		12
5	250		60	
		182		12
6	432		72	
		254		12
7	686		84	
		338		
8	1024			

4. Exponential Function

X	$y=5(2)^x$	1st Difference in y	2nd Difference in y
1	10		
		10	
2	20		10
		20	
3	40		20
		40	
4	80		40
		80	
5	160		80
		160	
6	320		160
		320	
7	640		320
		640	
8	1280		

What do you notice about the Rates of Change (differences in y) for these four functions?

- Linear Functions have a common 1st Difference
- Quadratic Functions have a common 2nd Difference
- Cubic Functions have a common 3rd Difference
- The 1st & 2nd differences in Exponential functions have a Common Multiplier.