

Student Activity: To investigate change and the change of the change

Use in connection with the interactive file, 'Change of the Change', on the Student's CD.

1.

a. Complete the following table for $f(x) = x^2$.

n	x	$U_n = x^2$	Change = any term – previous term	Change of the change = Change – previous change
1	-3		N/A	N/A
2	-2			N/A
3	-1			
4	0			
5	1			
6	2			
7	3			

b. What do you notice about all of the change of the change?

c. What type of graph is given by the function $f(x) = x^2$?

2.

a. Complete the following table for $f(x) = x^2 + 2x + 3$.

n	x	$T_n = x^2 + 2x + 3$	change = any term – previous term	Change of the change = first change – previous change
1	-3			
2	-2			
3	-1			
4	0			
5	1			
6	2			
7	3			

b. What do you notice about all of the change of the change?

c. What type of graph is given by the function $f(x) = x^2 + 2x + 3$?

3. What type of graph does $f(x)$ represent in the interactive file?

By moving the sliders in the interactive file, what can you conclude about:

a. The change for this type of graph?

b. The change of the change for this type of graph?
