

# Solutions

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How can I tell if a data set is linear, quadratic, or exponential?

**A**

x	y
0	2
1	5
2	8
3	11
4	14

1<sup>st</sup> differences are constant  
 $\Rightarrow$  Linear

**B**

x	y
0	3
1	4
2	7
3	12
4	19

2<sup>nd</sup> differences are constant  
 $\Rightarrow$  Quadratic

**C**

x	y
0	1
1	3
2	9
3	27
4	81

Common ratio  
 $\Rightarrow$  Exponential

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## Practice

Is it linear, quadratic, or exponential?

x	y
0	1
1	5
2	11
3	19
4	29

$\Rightarrow$  4  
 $\Rightarrow$  6  $\Rightarrow$  2  
 $\Rightarrow$  8  $\Rightarrow$  2  
 $\Rightarrow$  10  $\Rightarrow$  2  
 $\Rightarrow$  Quadratic

x	y
0	3
1	7
2	11
3	15
4	19

$\Rightarrow$  4  
 $\Rightarrow$  4  
 $\Rightarrow$  4  
 $\Rightarrow$  4  
 $\Rightarrow$  Linear

x	y
0	3
1	4
2	8
3	18
4	31

$\Rightarrow$  1  
 $\Rightarrow$  4  $\Rightarrow$  3  
 $\Rightarrow$  10  $\Rightarrow$  6  
 $\Rightarrow$  13  $\Rightarrow$  3  
 $\Rightarrow$  Something else

x	y
0	1
1	4
2	16
3	64
4	256

$\Rightarrow$   $\times 4$   
 $\Rightarrow$   $\times 4$   
 $\Rightarrow$   $\times 4$   
 $\Rightarrow$   $\times 4$   
 $\Rightarrow$  Exponential

x	y
0	1
1	8
2	15
3	22
4	29

$\Rightarrow$  7  
 $\Rightarrow$  7  
 $\Rightarrow$  7  
 $\Rightarrow$  7  
 $\Rightarrow$  Linear

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