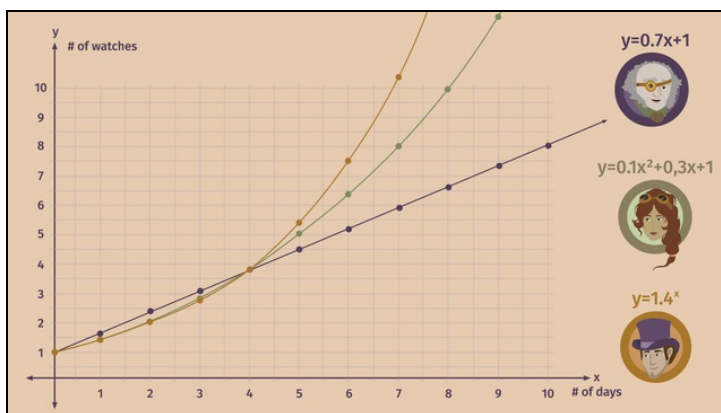




Printable Worksheets from [sofatutor.com](https://www.sofatutor.com)

Understanding and applying statistical models (linear, quadratic, and exponential)



- 1 Explain how to distinguish the several functions.
- 2 Construct the corresponding function.
- 3 Determine the ratio of the y values.
- 4 Plot the points from the graph and determine if it is linear, quadratic, or exponential.
- 5 Determine the corresponding function.
- 6 Determine if the table represents a linear, quadratic, or exponential function.
- + with lots of tips, answer keys, and detailed answer explanations for all of the problems.



The complete package, including all problems, hints, answers, and detailed answer explanations is available for all [sofatutor.com](https://www.sofatutor.com) subscribers.



Explain how to distinguish the several functions.

Choose the correct statements.

- A
For a linear function, the change in y is constant.
- B
A table represents a linear function if the change in any two consecutive y values divided by the change in their corresponding x values is constant.
- C
A table represents a quadratic function if the the change in x is constant and the change in the first difference is also constant.
- D
For quadratic functions, the change in y is constant.
- E
The table represents an exponential function if the change in x is always constant and the ratio of the y values is constant.
- F
For exponential functions, the change in the first difference is constant.



Hints for solving these problems

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of 6

Explain how to distinguish the several functions.

Hint #1

x	y
0	0
1	3
2	8
3	15
4	24

Here you see a table for a quadratic function.

Hint #2

The second difference of a table representing a quadratic function is constant.



Answers and detailed answer explanations for these problems

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of 6

Explain how to distinguish the several functions.

Answer key: B, C, E

Let's go through each statement one by one:

- **For a linear function, the change in y is constant.** This statement is false. For a linear function, the change in y over the change in x is constant. This subtle difference is important to remember.
- **A table represents a linear function if the change in any two consecutive y values divided by the change in their corresponding x values is constant.** This statement is true.
- **A table represents a quadratic function if the the change in x is constant and the change in the first difference is also constant.** This statement is true.
- **For quadratic functions, the change in y is constant.** This statement is false. For quadratic functions, the change in the change in y , or second difference, is constant.
- **The table represents an exponential function if the change in x is always constant and the ratio of the y values is constant.** This statement is true.
- **For exponential functions, the change in the first difference is constant.** This statement is false. For exponential functions, the ratio of the y values is constant.