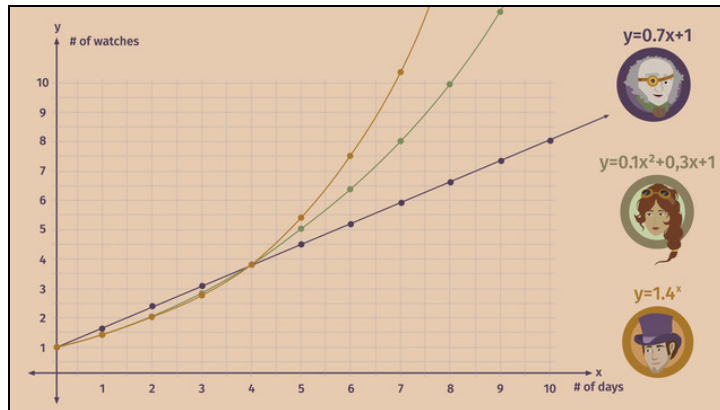Worksheets to print out from sofatutor.com

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 many hints, answer keys, and solution approaches for all tasks

⚠ The complete package, **including all tasks, hints, solutions, and solution approaches**, is available to all subscribers of sofatutor.com

Worksheet: Understanding and applying statistical models (linear, quadratic, and exponential)
Math / Algebra 1 / Statistics: Data Distribution / Understanding and applying statistical models (linear, quadratic, and exponential)

1
from 6

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.

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Our hints for the tasks

1
from 6

Explain how to distinguish the several functions.

1. Hint

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

Here you see a table for a quadratic function.

2. Hint

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

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Solutions and solution approaches for the tasks

1
from 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.