For the tables below, identify which of the following relationships:

1. Change by equal differences over equal intervals (linear)

OR

1. Change by equal factors (ratios) over equal intervals (exponential)

OR

1. Neither

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |  |
| --- | --- |
| $$x$$ | $$f(x)$$ |
| -30 | -57 |
| -25 | -47 |
| -20 | -37 |
| -15 | -27 |
| -10 | -17 |
| -5 | -7 |

 |

|  |  |
| --- | --- |
| *x* | $$f(x)$$ |
| 3 | -5 |
| 4 | -10 |
| 2 | -20 |
| 6 | 15 |
| 7 | 35 |
| 5 | 50 |

 |
|

|  |  |
| --- | --- |
| $$x$$ | $$f(x)$$ |
| 3 | -5 |
| 5 | -10 |
| 7 | -20 |
| 9 | -40 |
| 11 | -80 |

 |

|  |  |
| --- | --- |
| $$x$$ | $$f(x)$$ |
| 0 | -6 |
| 1 | -12 |
| 2 | -24 |
| 4 | -48 |
| 6 | -96 |

 |
|

|  |  |
| --- | --- |
| $$x$$ | $$f(x)$$ |
| 0 | 3 |
| 1 | 6 |
| 3 | 24 |
| 7 | 384 |
| 9 | 1536 |

 |

|  |  |
| --- | --- |
| $$x$$ | $$f(x)$$ |
| -1 | 4 |
| 1 | 8 |
| 4 | 2 |
| 5 | 6 |
| 9 | 30 |

 |
|

|  |  |
| --- | --- |
| $$x$$ | $$f(x)$$ |
| 0 | -5 |
| 4 | -2 |
| -4 | -8 |
| 8 | 1 |
| -8 | -11 |

 |

|  |  |
| --- | --- |
| $$x$$ | $$f(x)$$ |
| -10 | 7 |
| -5 | 8 |
| -0 | 9 |
| 5 | 4 |
| 10 | 3 |

 |
| 9.

|  |  |
| --- | --- |
| $$x$$ | $$f(x)$$ |
| 0 | -5 |
| 4 | -2 |
| 8 | 1 |
| 10 | 4 |
| 12 | 7 |

 |

|  |  |
| --- | --- |
| $$x$$ | $$f(x)$$ |
| -5 | 6 |
| -4 | 3 |
| -3 | 1 |
| -2 | 17 |
| -1 | 119 |

 |

##

## Ready

Topic: Recognizing the greater rate of change when comparing 2 linear functions or 2 exponential functions.

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**Decide which function is growing faster**

1. 2. 3.

4. 5. 6.

****

 7a. Examine the graph at the left from 0 to 1.

Which graph do you think is growing faster?

 b. Now look at the graph from 2 to 3.

 Which graph is growing faster in this interval?

## Set

Topic: Representations of linear and exponential functions.

**In each of the following problems, you are given one of the representations of a function. Complete the remaining 3 representations. Identify the rate of change for the relation.**

|  |
| --- |
| 8. **Equation**: **Graph** |
| **Table**

|  |  |
| --- | --- |
| Rides | Cost |
|  |  |

 |  |
| **Create a context**You and your friends go to the state fair. It costs $5 to get into the fair and $3 each time you go on a ride. |

|  |
| --- |
| 9. **Equation**: **Graph** |
| **Table**

|  |  |
| --- | --- |
| Time | Amount |
| 123456 | 185416248614584374 |

 |  |
| **Create a context** |

## Go

Topic: Recursive and explicit equations of geometric sequences.

**Write the recursive and explicit equations for each geometric sequence.**

10. Marissa has saved $1000 in a jar. She plans to withdraw half of what’s remaining in the jar at the end of each month.

|  |  |
| --- | --- |
| Folds in paper | Number of rectangles |
| 0123 | 1248 |

11. 12.

|  |  |
| --- | --- |
| Time(Days) | Number of Bacteria |
| 1234 | 10100100010000 |

13. 1024, 256, 64, 16, . . . 14. 3, 9, 27, 81, . . .

Need Help? Check out these related videos:

<http://www.khanacademy.org/math/algebra/ck12-algebra-1/v/identifying-exponential-models>

<http://www.khanacademy.org/math/algebra/ck12-algebra-1/v/linear--quadratic--and-exponential-models>