Quiz Review: Compare Linear, Exponential, and Quadratic Unit 5

**For questions 1-8:**

* **Identify the table as linear, exponential, quadratic, or neither.**
* **If you identify the table as linear or exponential, write an equation.**
1. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** $y=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| -3 | -2 | -1 | 0 | 1 | 2 | 3 |
| $$\frac{-1}{128}$$ | $$\frac{-1}{32}$$ | $$\frac{-1}{8}$$ | $$\frac{-1}{2}$$ | -2 | -8 | -32 |

1. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** $y=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| -3 | -2 | -1 | 0 | 1 | 2 | 3 |
| 2 | -1 | -4 | -7 | -10 | -13 | -16 |

1. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** $y=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| -3 | -2 | -1 | 0 | 1 | 2 | 3 |
| 6 | 2 | 0 | 0 | 2 | 6 | 12 |

1. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** $y=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| -4 | -3 | -2 | -1 | 0 | 1 | 2 |
| -12 | -7 | -2 | 3 | 8 | 13 | 18 |

1. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** $y=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| -5 | -4 | -3 | -2 | -1 | 0 | 1 |
| 8 | 7 | 6 | 5 | 4 | 3 | 4 |

1. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** $y=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| $$\frac{1}{16}$$ | $$\frac{1}{4}$$ | 1 | 4 | 16 | 64 | 256 |

1. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** $y=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| -5 | -4 | -3 | -2 | -1 | 0 | 1 |
| 96 | 48 | 24 | 12 | 6 | 3 | $$\frac{3}{2}$$ |

1. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** $y=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| -3 | -2 | -1 | 0 | 1 | 2 | 3 |
| 19 | 9 | 3 | 1 | 3 | 9 | 19 |

1. My graduating class from PV in 1994 had 199 students. It seems that class sizes are increasing at around 2.5% every year.
	1. Which type of equation is best represents this situation? (Circle one) **Linear Exponential Quadratic**
	2. Explain why you chose your answer to part “a”. (Give key features from the word problem)
	3. Write an equation to represent the situation. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	4. What will the graduating class be in 2015?
2. Billy was mad at his little brother Bobby for busting his iPod so he took Bobby’s iPod Shuffle and threw it off the top of an 82-foot bridge with a velocity of 48 feet per second.
3. Which type of equation is best represents this situation? (Circle one) **Linear Exponential Quadratic**
4. Explain why you chose your answer to part “a”. (Give key features from the word problem)
5. Write an equation to represent the situation. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. What was the maximum height that the IPOD Shuffle reached?
7. Ever since Mrs. Ver Heecke “liked” it on Facebook, business at Yoga Pose has been doubling every month. If the business started with only 9 clients.
	1. Which type of equation is best represents this situation? (Circle one) **Linear Exponential Quadratic**
	2. Explain why you chose your answer to part “a”. (Give key features from the word problem)
	3. Write an equation to represent the situation. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	4. How many clients did they have in month 8?
8. Mark and Tony joined a movie service online. For a one-time membership fee, you can purchase and download as many movies as you’d like for one low price. So far, Tony has purchased 4 movies, and has spent $38. Mark has purchased 7 movies and has spent $57.50.
	1. Which type of equation is best represents this situation? (Circle one) **Linear Exponential Quadratic**
	2. Explain why you chose your answer to part “a”. (Give key features from the word problem)
	3. Write an equation to represent the situation. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	4. How much does the membership to the service cost? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	5. How much do they charge per movie? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. Jordan’s mom got mad at him for missing curfew for the 3rd time. To teach him a lesson, she took him to the top of a 65-foot cliff and threw his keys with a velocity of 80 feet per second into the lake.
	1. Which type of equation is best represents this situation? (Circle one) **Linear Exponential Quadratic**
	2. Explain why you chose your answer to part “a”. (Give key features from the word problem)
	3. Write an equation to represent the situation. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	4. How long did it take for Jordan’s keys to hit the water?
10. If a 24-inch candle burns at a rate of 5% every hour, how tall will the candle be after 6 hours?
	1. Which type of equation is best represents this situation? (Circle one) **Linear Exponential Quadratic**
	2. Explain why you chose your answer to part “a”. (Give key features from the word problem)
	3. Write an equation to represent the situation. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	4. Answer the question above.
11. Sarah has been knocking 2 seconds off of her 400 meter run time every race. In her 11th race, she ran a time of 63 seconds.
	1. Which type of equation is best represents this situation? (Circle one) **Linear Exponential Quadratic**
	2. Explain why you chose your answer to part “a”. (Give key features from the word problem)
	3. Write an equation to represent the situation. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	4. What was her original time for her 400 meters? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	5. When will Sarah reach her goal of 57 seconds?