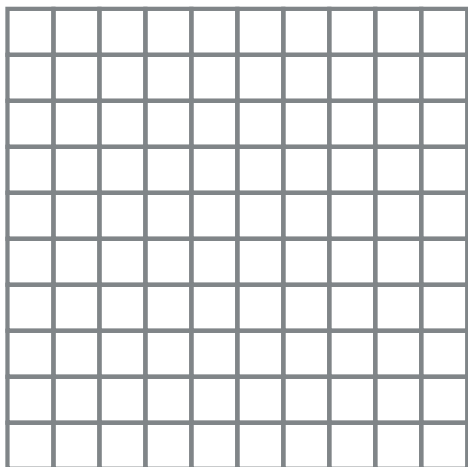


MODELING THE STORY

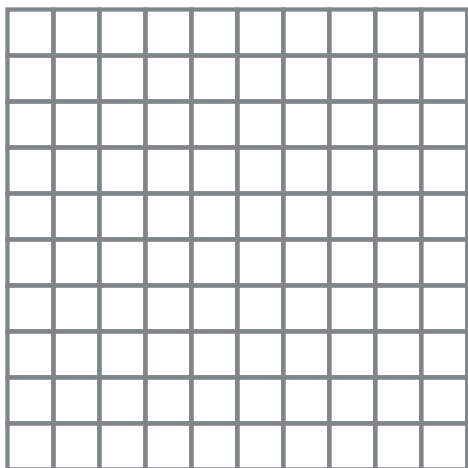
Read each story and sketch a graph that represents the phenomenon in the story. Be sure to label the axes and indicate a scale. Then, determine which family of functions your sketch belongs to. Explain your reasoning.

- 1) During a certain concert, the volume of the song decreases steadily from 10 decibels to 1 decibel during five minutes and then increases back to 10 decibels during the next five minutes.



Family of Functions and Reasoning

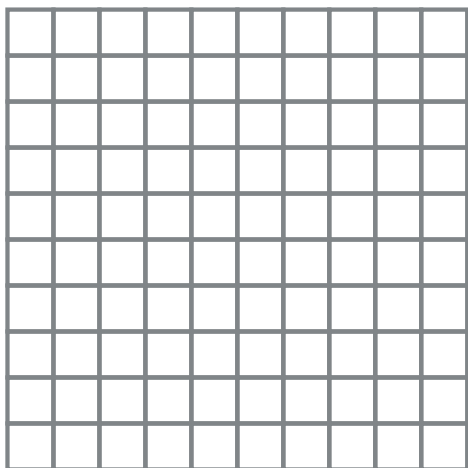
- 2) When a ball is thrown up, it starts to slow down as it travels upward (due to gravity). A ball is thrown into the air from ground level. After 5 seconds, it reaches a height of 40 ft, and then it begins to fall. As it falls, it speeds up (due to gravity) until it hits the ground 10 seconds after it was thrown.



Family of Functions and Reasoning



3) A 1-foot-tall tree was planted at the school 9 years ago. It took 5 years for the tree to reach a height of 5 ft. Then the tree's height doubled two years later. One year after that, the tree was 15 ft tall. This year, the tree was measured at 21 ft.



Family of Functions and Reasoning

