

Date: _____

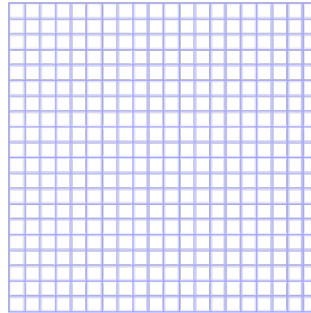


3.6 Exploring Quadratic and Exponential Graphs

Activity #1 : Graphs of Exponential Relations

1. Use a graphing app (Desmos) to graph $y = 2^x$. Copy the table down and accurately sketch the graph.

x	y
-3	
-2	
-1	
0	
1	
2	
3	



2. Identify the y - intercept for the graph.
3. Are there any x - intercepts? Think about possible reasons for this.
4. Note any other interesting features of this graph.
5. How is the equation for this exponential relation different from the equation of a quadratic relation ($y = 2^x$ vs. $y = x^2$)

Activity #2: Properties of Zero and Negative Exponents

1. Look at your values of y when x was negative in the table (instructions to find the table are in the 3.1 note!) for $y = 2^x$. What does the negative exponent seem to do to the base? Test your theory using a few other numbers.
2. What happens when you raise the base to the exponent zero (what was the value of y when x was zero)? Try raising a few other bases to the exponent zero. What do you notice?



Use your rules to complete p. 182 #3 - 7