

# 6-7 Comparing Linear and Exponential Models

	<b>LINEAR MODEL</b> $y = 2x + 1$	<b>EXPONENTIAL MODEL</b> $y = 2^{x+3} - 3$																												
Describe, in words, the rule for each type of growth.	Multiply $x$ by 2, then add 1.	Raise 2 to the " $x$ " power.																												
Which kind of sequence corresponds to each model? Explain the differences.	arithmetic * common difference	geometric * common ratio																												
Make a table of values (input/output)	<table border="1"> <thead> <tr> <th>Input</th> <th>Output</th> </tr> </thead> <tbody> <tr><td>-2</td><td>-3</td></tr> <tr><td>-1</td><td>-1</td></tr> <tr><td>0</td><td>1</td></tr> <tr><td>1</td><td>3</td></tr> <tr><td>2</td><td>5</td></tr> <tr><td>3</td><td>7</td></tr> </tbody> </table>	Input	Output	-2	-3	-1	-1	0	1	1	3	2	5	3	7	<table border="1"> <thead> <tr> <th>Input</th> <th>Output</th> </tr> </thead> <tbody> <tr><td>-2</td><td>1/4</td></tr> <tr><td>-1</td><td>1/2</td></tr> <tr><td>0</td><td>1</td></tr> <tr><td>1</td><td>2</td></tr> <tr><td>2</td><td>4</td></tr> <tr><td>3</td><td>8</td></tr> </tbody> </table>	Input	Output	-2	1/4	-1	1/2	0	1	1	2	2	4	3	8
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Graph each function.																														
Find the y-intercept for each function.	$y = 2(0) + 1$ $y = 1$ $(0, 1)$	$y = 2^0$ $y = 1$ $(0, 1)$																												
Write the explicit rule for each function.	$f(n) = f(1) + d(n-1)$ $f(n) = 1 + 2(n-1)$	$f(n) = f(1) \cdot r^{n-1}$ $f(n) = 1 \cdot 2^{n-1}$																												