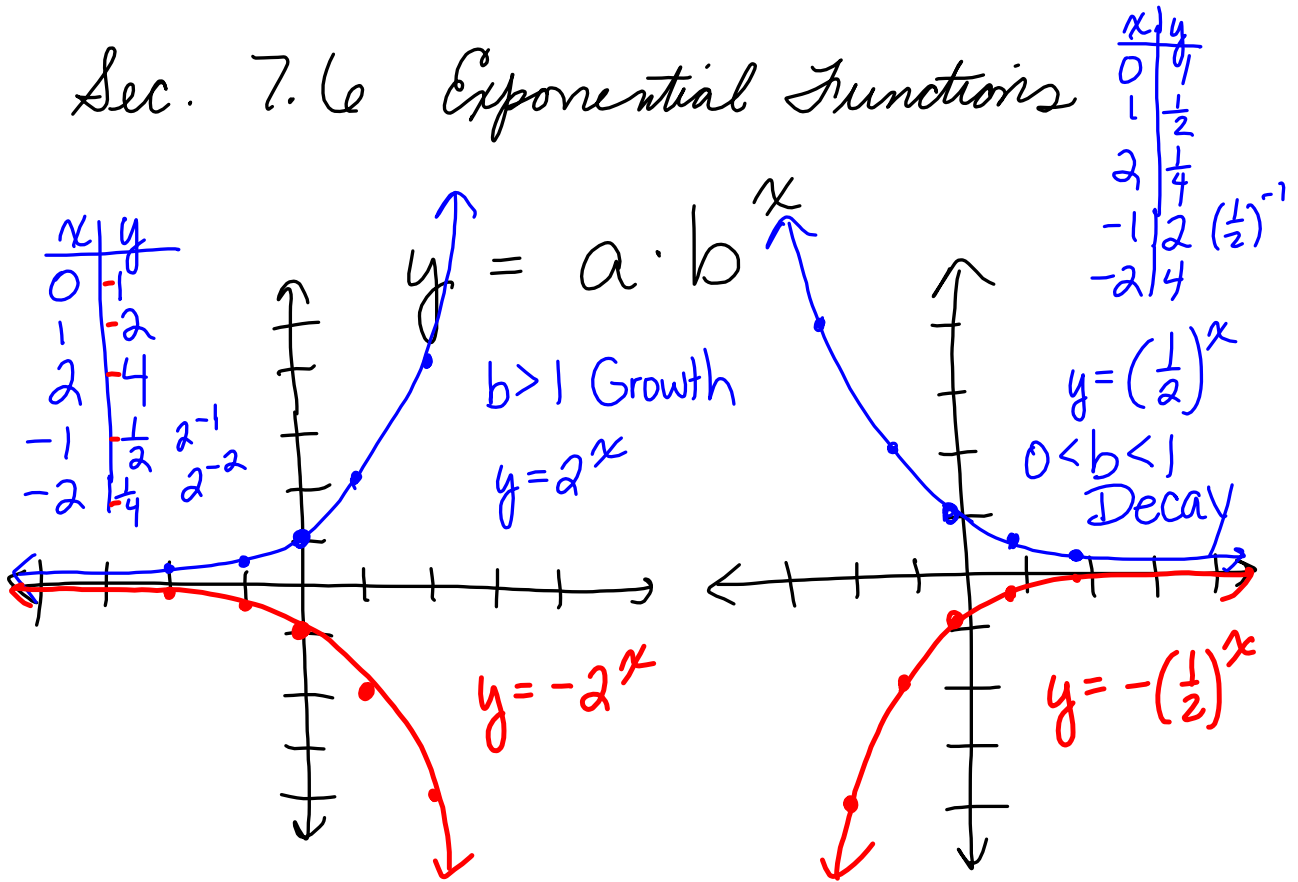


Sec. 7.6 Exponential Functions



Problem 1: Exponential function?

a.

x	y
0	2
1	6
2	10
3	14

linear function
common difference
 $y = 4x + 2$

b.

x	y
0	-1
1	-3
2	-9
3	-27

exponential function
common ratio
 $y = -1 \cdot 3^x$

c. $y = 2x$
linear

d. $y = 2^x$
exponential

Problem 2:

A culture of bacteria doubles every hour. Initially, there are 2200 bacteria. The function $f(x) = 2200 \cdot 2^x$ gives the number of bacteria after x hours. How many bacteria are there after $\frac{5}{x}$ hours?

$$f(5) = 2200 \cdot 2^5 = 2200 \cdot 32$$

$$f(5) = 70,400$$

$$(5, 70,400)$$

Problem 3: Graph $y = 0.25 \cdot 3^x$

x	y	
0	0.25	$0.25 \cdot 3^0$
1	0.75	$0.25 \cdot 3^1$
2	2.25	$0.25 \cdot 3^2$ $0.25 \cdot 9$
3	6.75	$0.25 \cdot 3^3$ $0.25 \cdot 27$
-1	$\frac{1}{12}$	$0.25 \cdot 3^{-1}$ $\frac{1}{4} \cdot \frac{1}{3}$

