

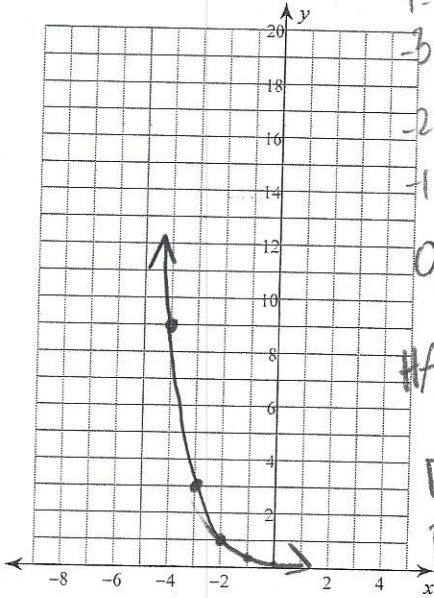
Graphing Exponential Functions

Graph each function. Then state the domain, range, and equation of the asymptote.

1)  $y = \left(\frac{1}{3}\right)^{x+2}$

\*Left 2  
X | Y

-4	= -2	9
-3	= -1	3
-2	= 0	1
-1	= 1	$\frac{1}{3}$
0	= 2	$\frac{1}{9}$

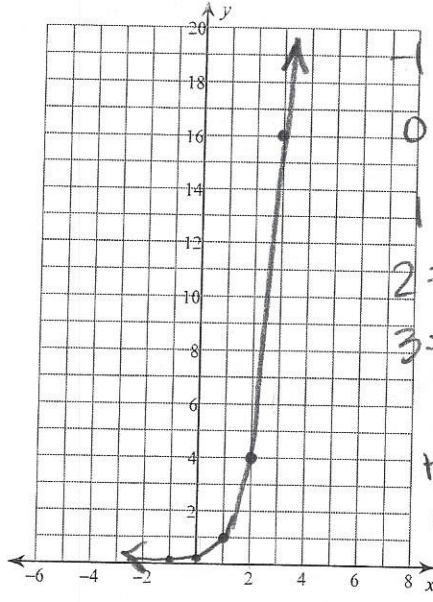


HA:  $y = 0$   
D:  $(-\infty, \infty)$   
R:  $(0, \infty)$

2)  $y = 4^{x-1}$

\*Right 1

X		Y
-1	= -2	$\frac{1}{16}$
0	= -1	$\frac{1}{4}$
1	= 0	1
2	= 1	4
3	= 2	16

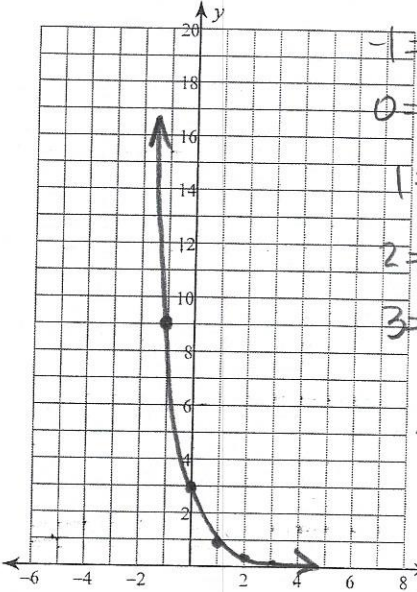


HA:  $y = 0$   
D:  $(-\infty, \infty)$   
R:  $(0, \infty)$

3)  $y = \left(\frac{1}{3}\right)^{x-1}$

\*Right 1

X		Y
-1	= -2	9
0	= -1	3
1	= 0	1
2	= 1	$\frac{1}{3}$
3	= 2	$\frac{1}{9}$

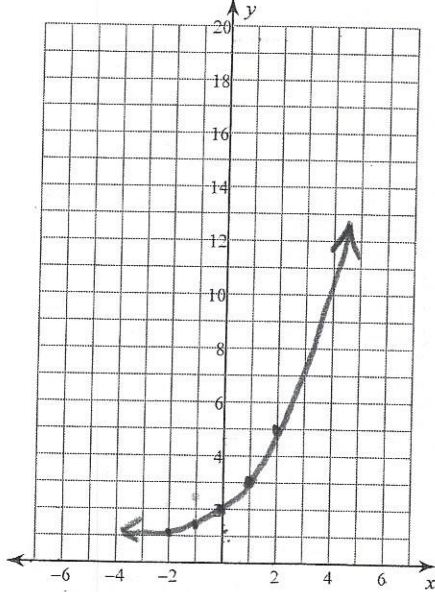


HA:  $y = 0$   
D:  $(-\infty, \infty)$   
R:  $(0, \infty)$

4)  $y = 2^x + 1$

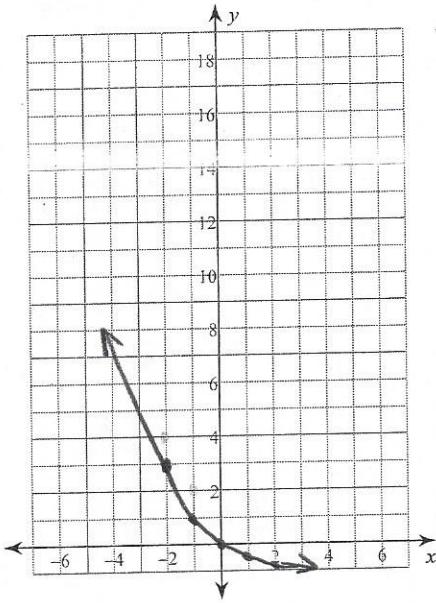
\*up 1

X		Y
-2	$\frac{1}{4} = 1\frac{1}{4}$	
-1	$\frac{1}{2} = 1\frac{1}{2}$	
0	1 = 2	
1	2 = 3	
2	4 = 5	



HA:  $y = 1$   
D:  $(-\infty, \infty)$   
R:  $(1, \infty)$

5)  $y = \left(\frac{1}{2}\right)^x - 1$

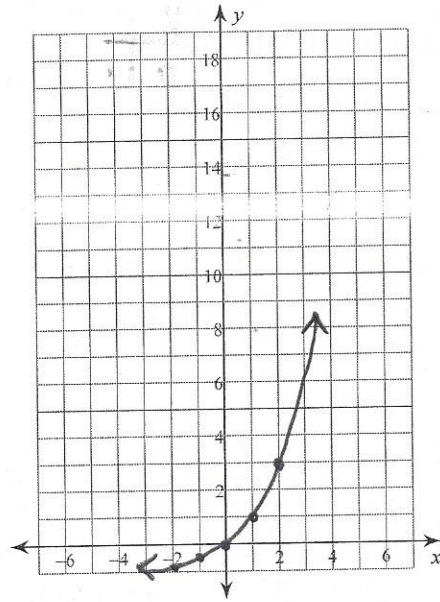


Down ↑

X	Y
-2	$4 = 3$
-1	$2 = 1$
0	$1 = 0$
1	$\frac{1}{2} = -\frac{1}{2}$
2	$\frac{1}{4} = -\frac{3}{4}$

HA:  $y = -1$   
 D:  $(-\infty, \infty)$   
 R:  $(-1, \infty)$

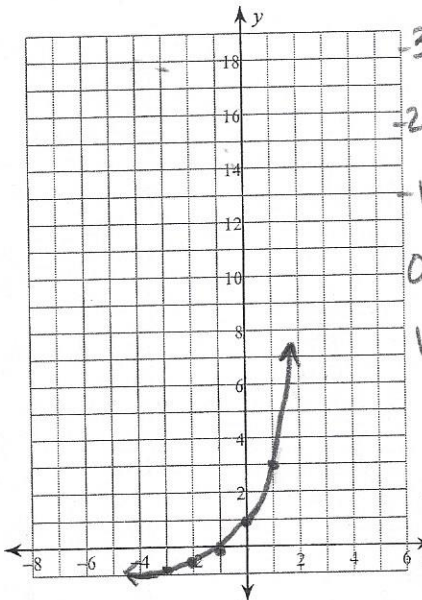
6)  $y = 2^x - 1$



X	Y
-2	$\frac{1}{4} = -\frac{3}{4}$
-1	$\frac{1}{2} = -\frac{1}{2}$
0	$1 = 0$
1	$2 = 1$
2	$4 = 3$

HA:  $y = -1$   
 D:  $(-\infty, \infty)$   
 R:  $(-1, \infty)$

7)  $y = 2^{x+1} - 1$

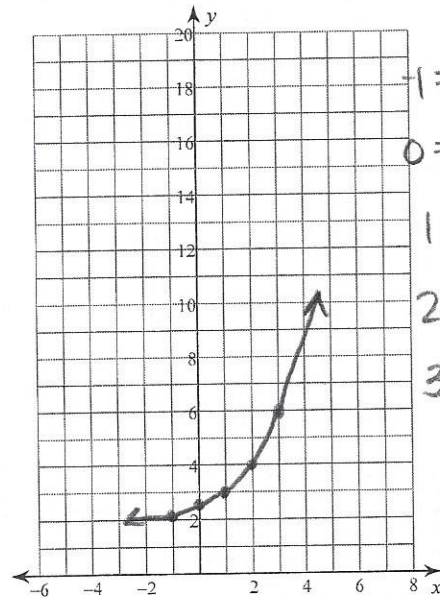


Left ↑      Down ↑

X	Y
-3	$\frac{1}{4} = -\frac{3}{4}$
-2	$\frac{1}{2} = -\frac{1}{2}$
-1	$1 = 0$
0	$2 = 1$
1	$4 = 3$

HA:  $y = 1$   
 D:  $(-\infty, \infty)$   
 R:  $(1, \infty)$

8)  $y = 2^{x-1} + 2$

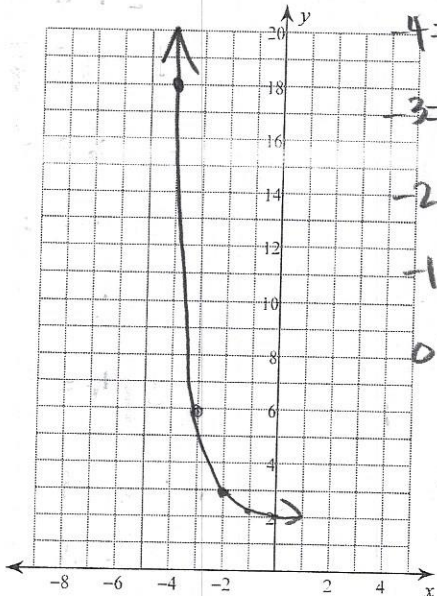


↑+1      ↑+2

X	Y
-1	$\frac{1}{4} = 2\frac{1}{4}$
0	$\frac{1}{2} = 2\frac{1}{2}$
1	$1 = 3$
2	$2 = 4$
3	$4 = 6$

HA:  $y = 2$   
 D:  $(-\infty, \infty)$   
 R:  $(2, \infty)$

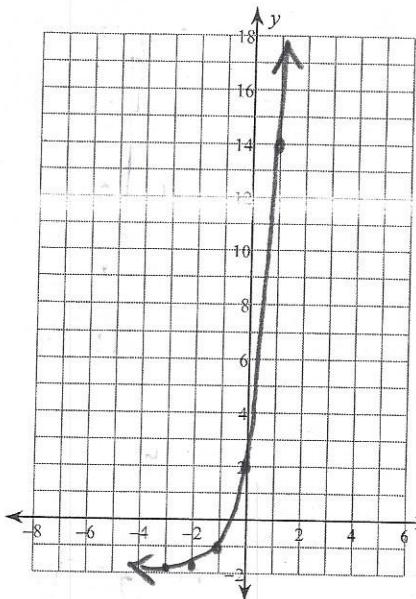
9)  $y = \left(\frac{1}{4}\right)^{x+2} + 2$



x	y
-4	18
-3	6
-2	3
-1	$2\frac{1}{4}$
0	$2\frac{1}{16}$

HA:  $y = 2$   
 D:  $(-\infty, \infty)$   
 R:  $(2, \infty)$

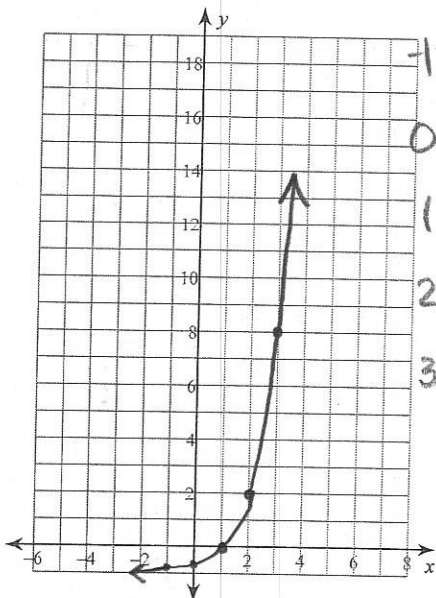
10)  $y = 4^{x+1} - 2$



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

HA:  $y = -2$   
 D:  $(-\infty, \infty)$   
 R:  $(-2, \infty)$

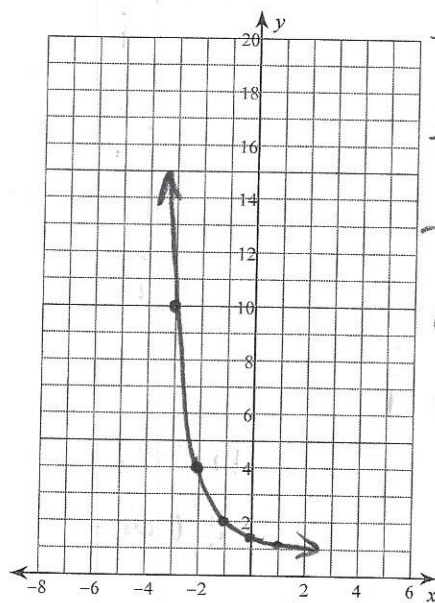
11)  $y = 3^{x-1} - 1$



x	y
-1	-1
0	$-\frac{2}{3}$
1	0
2	1
3	2

HA:  $y = -1$   
 D:  $(-\infty, \infty)$   
 R:  $(-1, \infty)$

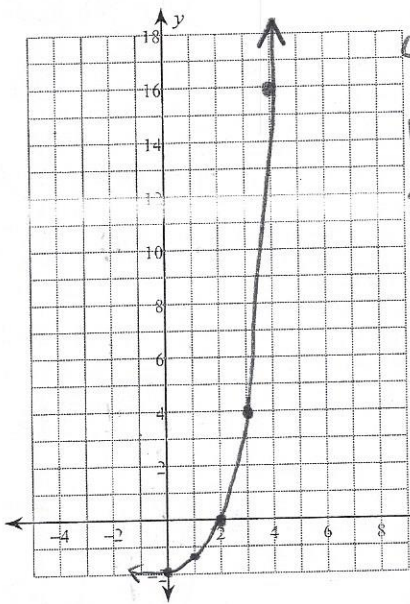
12)  $y = \left(\frac{1}{3}\right)^{x+1} + 1$



x	y
-3	10
-2	4
-1	2
0	$1\frac{1}{3}$
1	$1\frac{1}{9}$

HA:  $y = 1$   
 D:  $(-\infty, \infty)$   
 R:  $(1, \infty)$

13)  $y = 2 \cdot 3^{x-2} - 2$



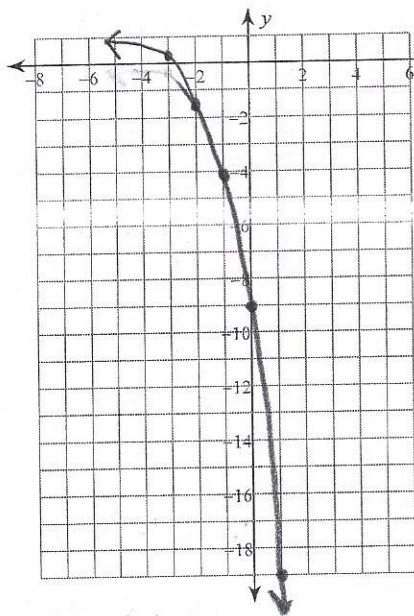
X	Y
0	$-\frac{2}{9} = -\frac{2}{9}$
1	$-\frac{2}{3} = -\frac{1}{3}$
2	0
3	4
4	18 = 16

HA:  $y = -2$

D:  $(-\infty, \infty)$

R:  $(-2, \infty)$

14)  $y = -5 \cdot 2^{x+1} + 1$



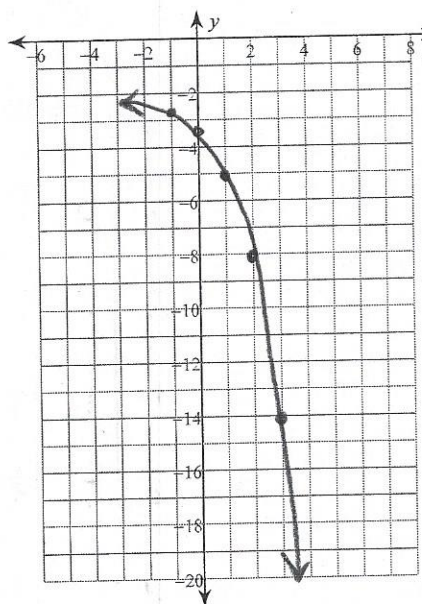
X	Y
3	$-\frac{5}{4} = -1\frac{1}{4} = -\frac{5}{4}$
2	$-\frac{5}{2} = -2\frac{1}{2} = -\frac{5}{2}$
1	0
0	-5 = -4
0	1
1	-10 = -9
1	-20 = -19

HA:  $y = 1$

D:  $(-\infty, \infty)$

R:  $(-\infty, 1)$

15)  $y = -3 \cdot 2^{x-1} - 2$



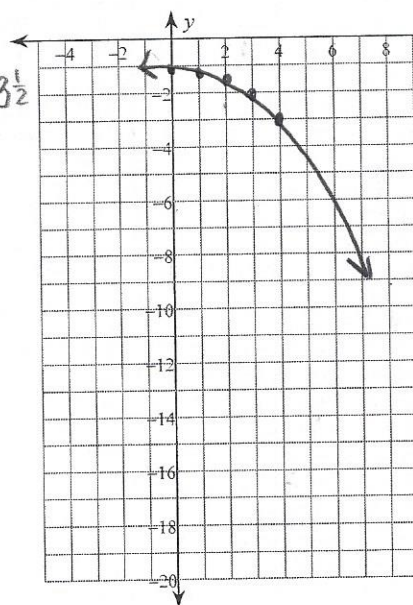
X	Y
0	$-\frac{3}{4} = -\frac{3}{4}$
0	$-\frac{3}{2} = -1\frac{1}{2} = -3\frac{1}{2}$
1	-3 = -5
2	-6 = -8
3	-12 = -14

HA:  $y = -2$

D:  $(-\infty, \infty)$

R:  $(-\infty, -2)$

16)  $y = -\frac{1}{2} \cdot 2^{x-2} - 1$



X	Y
0	$-\frac{1}{8} = -\frac{1}{8}$
1	$-\frac{1}{4} = -\frac{1}{4}$
2	$-\frac{1}{2} = -\frac{1}{2}$
3	-1 = -2
4	-2 = -3

HA:  $y = -1$

D:  $(-\infty, \infty)$

R:  $(-\infty, -1)$