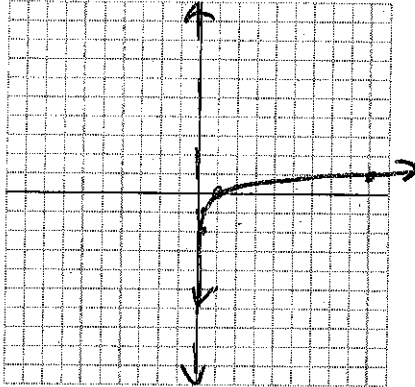


Graph the following using the two "key points" and the asymptote:

1)  $y = \log_9 x$   
 $y^{-1} = 9^x$

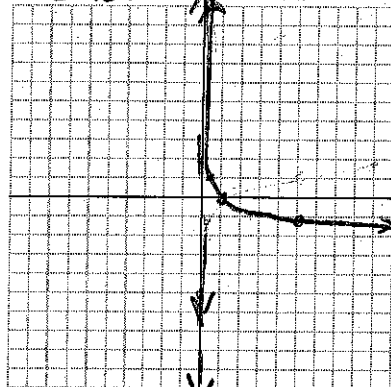
x	y	x	y
-2	.01	0	1
-1	.11	1	9
0	1	2	81
1	9		
2	81		



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

2)  $y = \log_{1/5} x$   
 $y^{-1} = \frac{1}{5}^x$

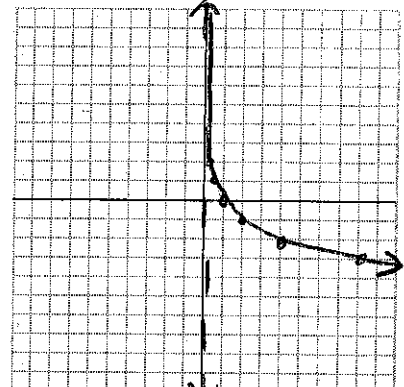
x	y	x	y
-2	25	2	.04
-1	5	1	.2
0	1	0	1
1	.2	-1	5
2	.04	-2	25



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

3)  $y = \log_{1/2} x$   
 $y^{-1} = \frac{1}{2}^x$

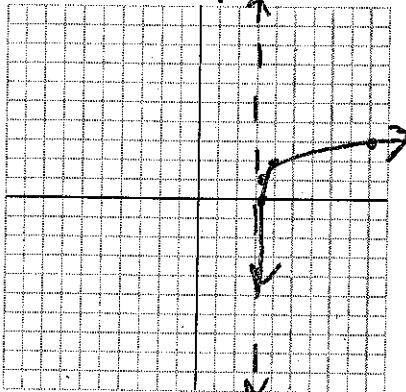
x	y	x	y
-2	4	4	.25
-1	2	2	.5
0	1	1	1
1	.5	0	1
2	.25	-1	2



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

4)  $y = \log_6(x-3) + 2$   
 $y^{-1} = 6^{x-2} + 3$

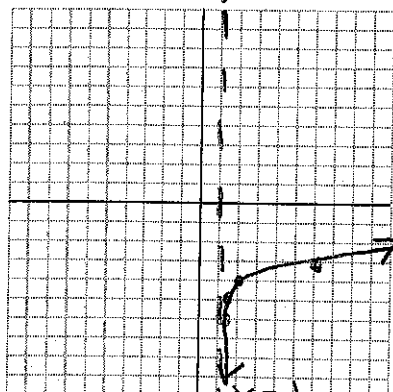
x	y	x	y
0	3.03	3	3
1	3.17	4	4
2	4	5	5
3	9	6	6
4	39	7	7



D:  $(3, \infty)$  R:  $x = 3$   
R:  $(-\infty, \infty)$

5)  $y = \log_5(x-1) - 4$   
 $y^{-1} = 5^{x-4} + 1$

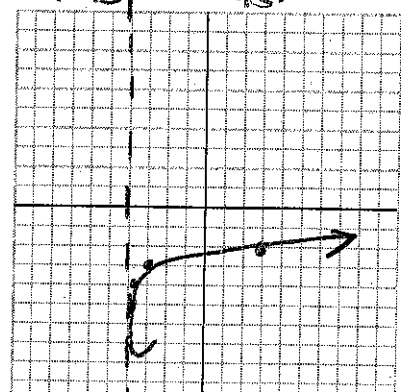
x	y	x	y
-6	1.04	1	1
-5	1.2	2	2
-4	2	3	3
-3	6	4	4
-2	26	5	5



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

6)  $y = \log_7(x+4) - 3$   
 $y^{-1} = 7^{x+3} - 4$

x	y	x	y
-5	-3.98	-4	-4
-4	-3.86	-3	-3
-3	-3	-2	-2
-2	3	-1	3
-1	45	0	4

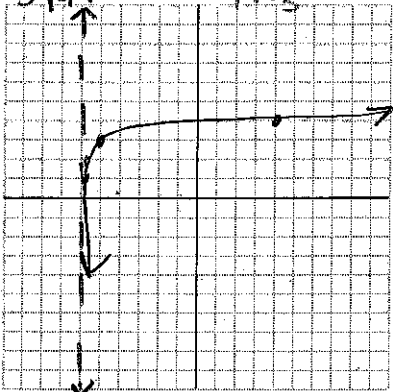


D:  $(-4, \infty)$  R:  $x = -4$   
R:  $(-\infty, \infty)$

7)  $y = \log(x+6) + 3$   
 $y^{-1} = 10^{x-3} - 6$

x	y
1	4.99
2	4.9
3	5
4	5.1
5	5.4

x	y
1	4.99
2	4.9
3	5
4	5.1
5	5.4

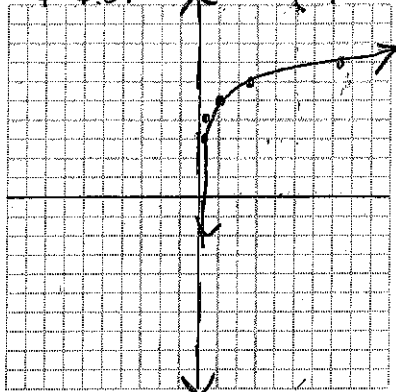


D:  $(-6, \infty)$  R:  $(-\infty, \infty)$

8)  $y = \ln(x) + 5$   
 $y^{-1} = e^{x-5}$

x	y
3	1.14
4	1.37
5	1
6	2.72
7	7.39

x	y
3	1.14
4	1.37
5	1
6	2.72
7	7.39

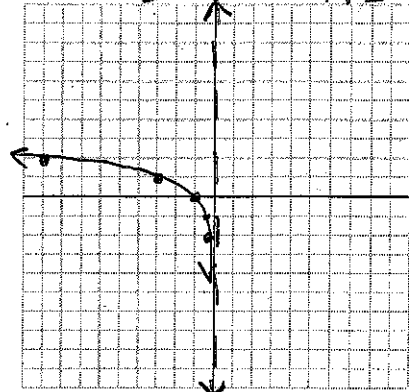


D:  $(0, \infty)$  R:  $(-\infty, \infty)$

9)  $y = \log_3(-x)$   
 $y^{-1} = -3^x$

x	y
-2	-1.1
-1	-1.33
0	-1
1	-3
2	-9

x	y
-2	-1.1
-1	-1.33
0	-1
1	-3
2	-9



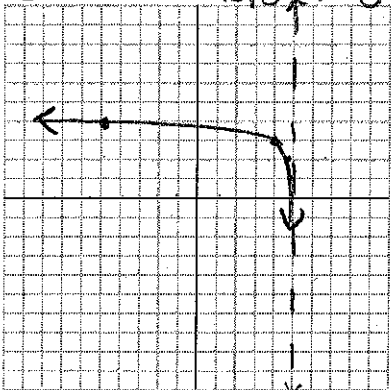
D:  $(-\infty, 0)$  R:  $(-\infty, \infty)$

10)  $y = \log(-x+5) + 3$   
 $y^{-1} = -10^{x-3} + 5$

x	y
1	4.99
2	4.9
3	4
4	-5
5	-9.5

x	y
1	4.99
2	4.9
3	4
4	-5
5	-9.5

$x = 5$



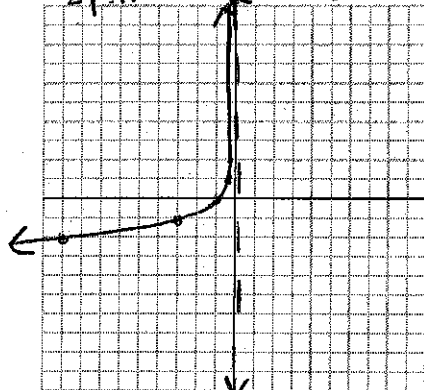
D:  $(-\infty, 5)$  R:  $(-\infty, \infty)$

Find the equation of the asymptotes.

11)  $y = \log_{1/3}(-x)$   
 $y^{-1} = -(\frac{1}{3})^x$

x	y
-2	-9
-1	-3
0	-1
1	-1.33
2	-1.1

x	y
-2	-9
-1	-3
0	-1
1	-1.33
2	-1.1

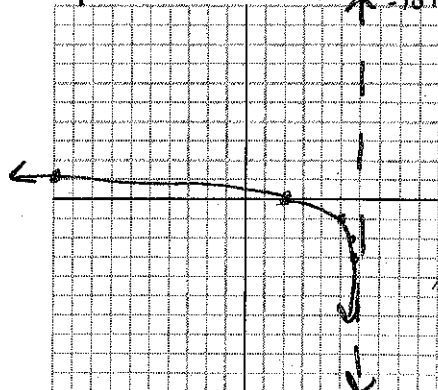


D:  $(-\infty, 0)$  R:  $(-\infty, \infty)$

12)  $y = \log_4(-x+6) - 1$   
 $y^{-1} = -4^{x+1} + 6$

x	y
-3	5.94
-2	5.75
-1	5
0	2
1	-10

x	y
-3	5.94
-2	5.75
-1	5
0	2
1	-10



D:  $(-\infty, 6)$  R:  $(-\infty, \infty)$

13)  $y = -2 \log_4(x+3) + 12$   
 $x = -3$

14)  $y = 9 \ln(x+8) - 4$   
 $x = -8$

15)  $y = 25 \log(x-29) + 13$   
 $x = 29$

16)  $y = 2 \cdot e^{x-69} + 5$   
 $y = 5$

17)  $y = -\frac{5}{2} \cdot 2^{x-2} + 5$   
 $y = 5$

18)  $y = 3 \cdot \left(\frac{5}{9}\right)^{x-22} + 18$   
 $y = 18$