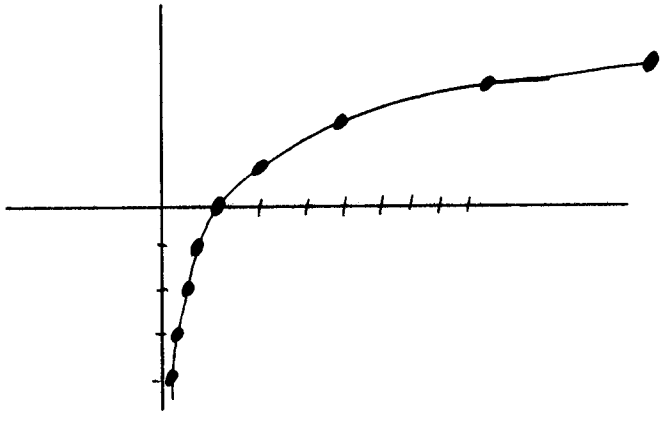
P-39 We now study the function of x given by the equation $\boxed{y = \log_2(x).}$

1. Complete the table below by finding the y-value for each given x-value.

x	$\frac{1}{16}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{2}$	1	2	4	8	16
y	-4	-3	-2	-1	0	1	2	3	4

2. Plot the nine pairs of (x,y) values from your table in Problem 1. Draw a smooth curve through your points.



3. Does the graph of $y = \log_2(x)$ ever cross the y-axis? no
Does it ever touch the y-axis? no

4. What is the x-intercept of the graph of $y = \log_2(x)$? (1, 0)

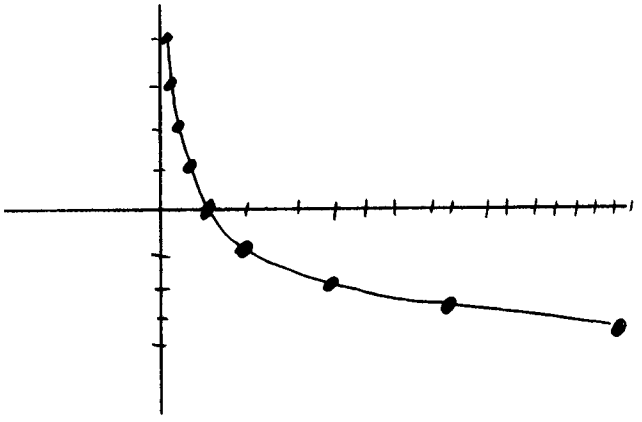
5. Does the your sketch rise or fall as x increases? it rises

We now study the function of x given by the equation $\boxed{y = \log_{1/2}(x).}$

6. Complete the table below by finding the y-value for each given x-value.

x	$\frac{1}{16}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{2}$	1	2	4	8	16
y	4	3	2	1	0	-1	-2	-3	-4

7. Plot the nine pairs of (x,y) values from your table in Problem 6. Draw a smooth curve through your points.



8. Does the graph of $y = \log_{1/2}(x)$ ever cross the y-axis? no
Does it ever touch the y-axis? no

9. What is the x-intercept of the graph of $y = \log_{1/2}(x)$? (1, 0)

10. Does the your sketch rise or fall as x increases? it falls