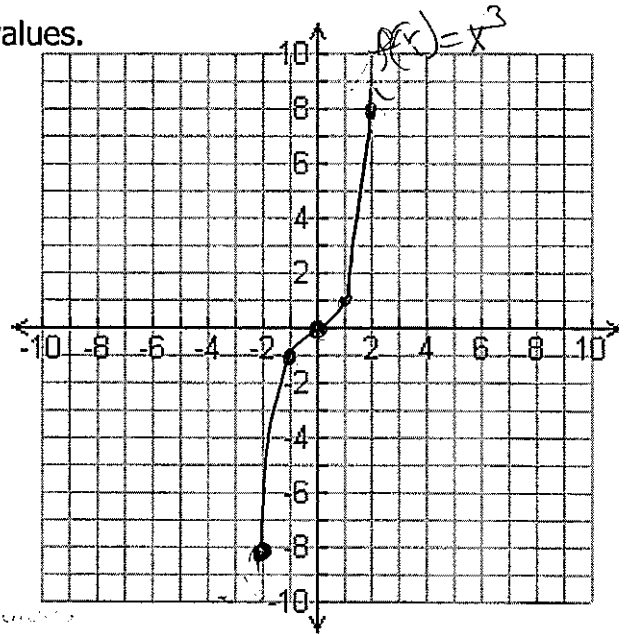


Section 4 Problem Set - Piecewise Functions

Graph each of the following functions. Include a table of values.

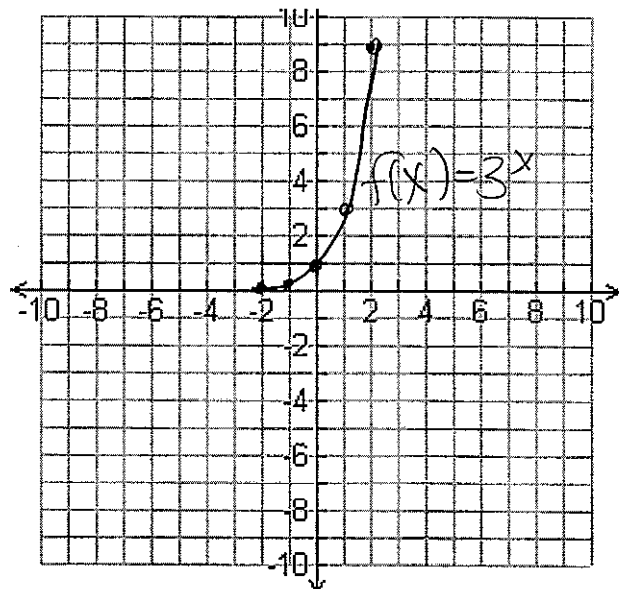
25.) $f(x) = x^3, -2 \leq x \leq 2$

x	f(x)
-2	-8
-1	-1
0	0
1	1
2	8



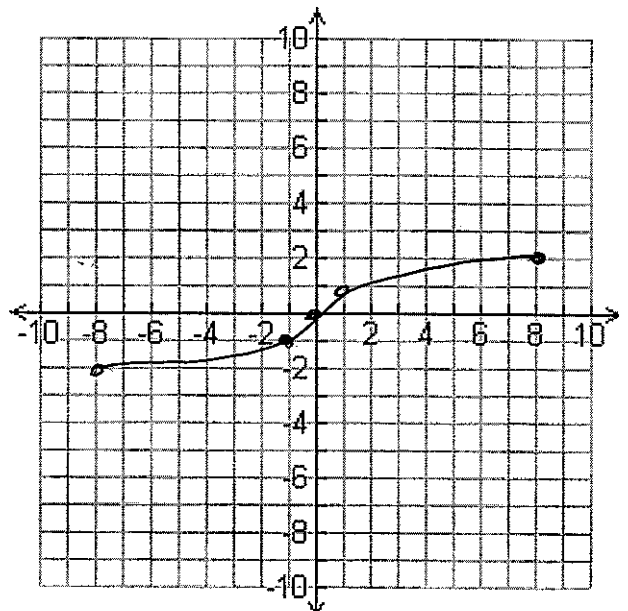
26.) $f(x) = 3^x, -2 \leq x \leq 2$

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



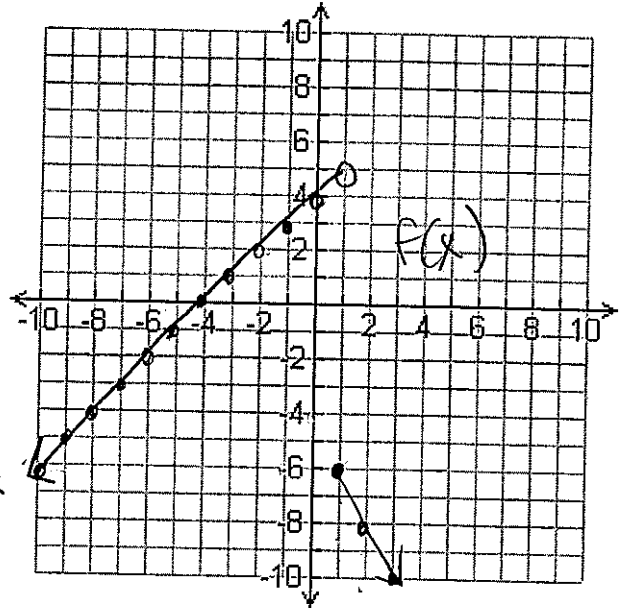
27.) $f(x) = \sqrt[3]{x}, -8 \leq x \leq 8$

x	y
-8	-2
-1	-1
0	0
1	1
8	2



Graph each of the following. Be sure to identify the endpoints. Also, find $f(-3)$ and $f(14)$.

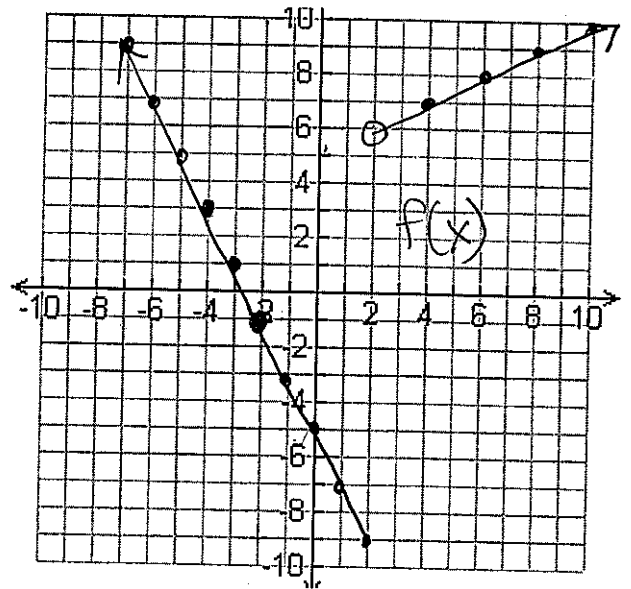
28.) $f(x) = \begin{cases} -2x - 4, & x \geq 1 \\ x + 4, & x < 1 \end{cases}$



$f(-3) = -3 + 4 = 1$
 $f(14) = -2(14) - 4 = -28 - 4 = -32$

$f(-3) = \frac{1}{}$
 $f(14) = \frac{-32}{}$

29.) $f(x) = \begin{cases} -2x - 5, & x \leq 2 \\ \frac{1}{2}x + 5, & x > 2 \end{cases}$



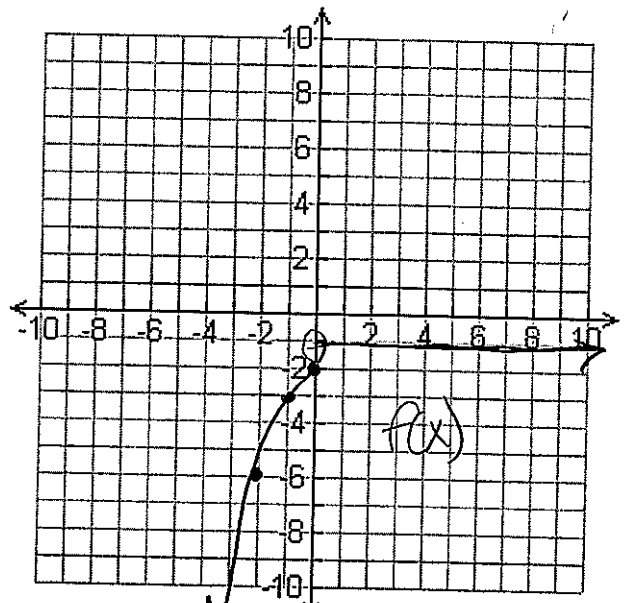
$f(-3) = -2(-3) - 5 = 6 - 5 = 1$
 $f(14) = \frac{1}{2}(14) + 5 = 7 + 5$

$f(-3) = \frac{1}{}$
 $f(14) = \frac{12}{}$

30.) $f(x) = \begin{cases} -x^2 - 2, & x \leq 0 \\ -1, & x > 0 \end{cases}$

x	f(x)
-3	-11
-2	-6
-1	-3
0	-2

$f(-3) = \underline{\hspace{2cm}}$
 $f(14) = \underline{\hspace{2cm}}$

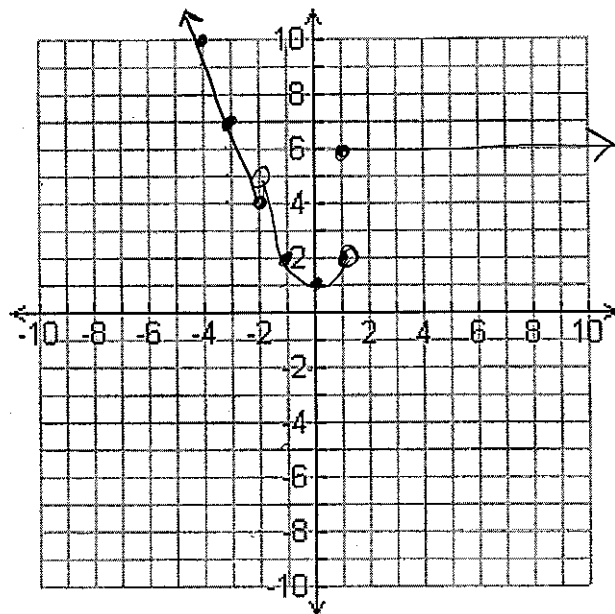


31.) $f(x) = \begin{cases} 3x - 2, & x \leq -2 \\ x^2 + 1, & -2 < x < 1 \\ 6, & x \geq 1 \end{cases}$

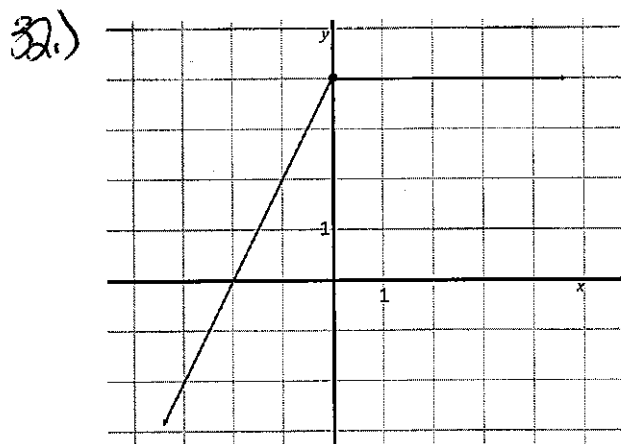
x	f(x)
-2	5
-1	2
0	1
1	2

$f(-3) = 7$
 $f(14) = 6$

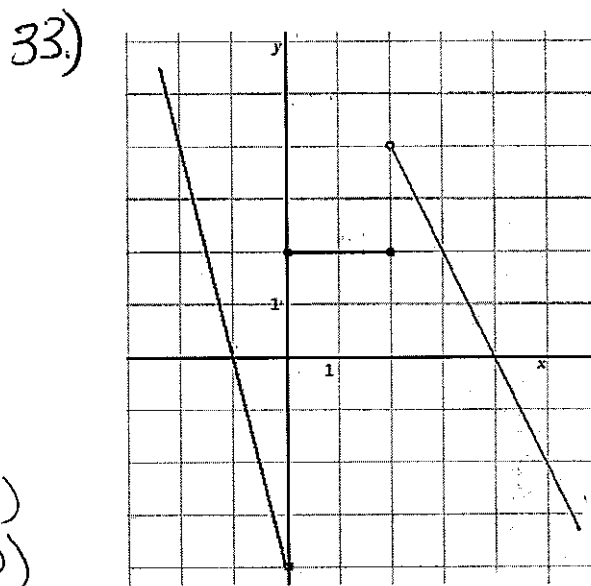
$f(-3) = -3(-3) - 2 = 9 - 2 = 7$
 $f(14) = 6$



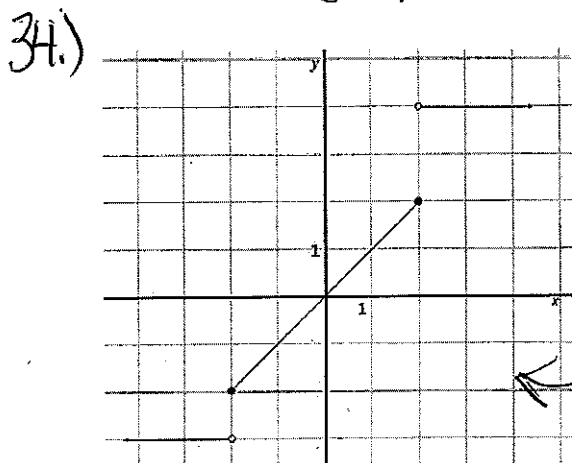
Write a piecewise function for each graph below.



$f(x) = \begin{cases} 2x + 4, & x \leq 0 \text{ (or } x < 0) \\ 4, & x > 0 \text{ (or } x \geq 0) \end{cases}$



Graph of h



Graph of p

$f(x) = \begin{cases} -3, & x < -2 \\ x, & -2 \leq x \leq 2 \\ 4, & x > 2 \end{cases}$

$f(x) = \begin{cases} -4x - 4, & x < 0 \\ 2, & 0 \leq x \leq 2 \\ -2x + 8, & x > 2 \end{cases}$

