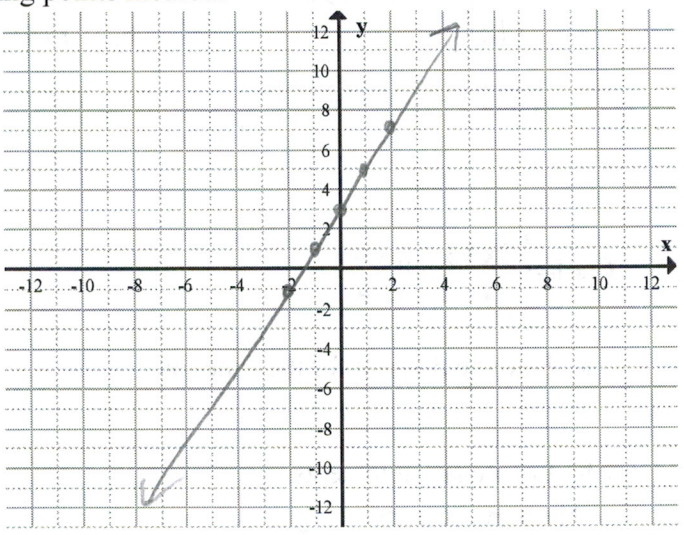
3.4 Practice Problems

1. Graph the following functions using the plotting points method.

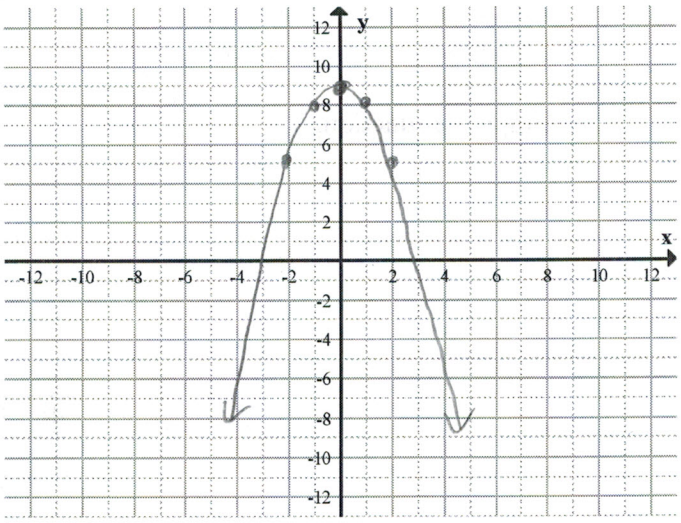
a. $f(x)=2x+3$

x	f(x)=y
-2	-1
-1	1
0	3
1	5
2	7



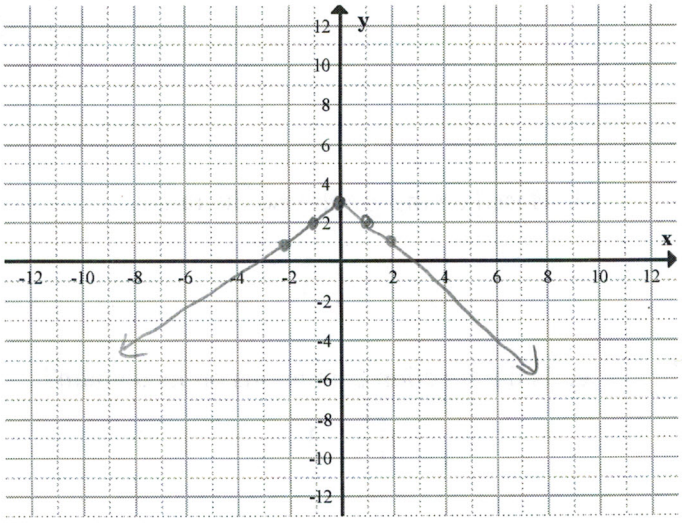
b. $g(x)=9-x^2$

x	g(x)=y
-2	5
-1	8
0	9
1	8
2	5



c. $h(x)=-|x|+3$

x	h(x)=y
-2	1
-1	2
0	3
1	2
2	1



2. Evaluate the Piecewise function.

$$f(x)=\begin{cases} 2x+3 & x\le 4 \\ -x-2 & x>4 \end{cases}$$

a. $f(2)$

$2\le 4$ $f(2)=2(2)+3$
$=4+3$
$=7$

b. $f(4)$

$4\le 4$ $f(4)=2(4)+3$
$=8+3$
$=11$

c. $f(6)$

$6>4$ $f(6)=-6-2$
$=-8$

3. $f(x)=\begin{cases} 2x+3 & x\le 4 \\ -x-2 & x>4 \end{cases}$

a. Find the domain for the function

$(-\infty,\infty)$

b. Locate any intercepts.

y-int $x=0$
$0<4$
$2(0)+3$
$=3$
$(0,3)$

x-int $x=0$
$2x+3=0$
$-3\ -3$
$\frac{2x}{2}=\frac{-3}{2}$
$x=-\frac{3}{2}$ ✓

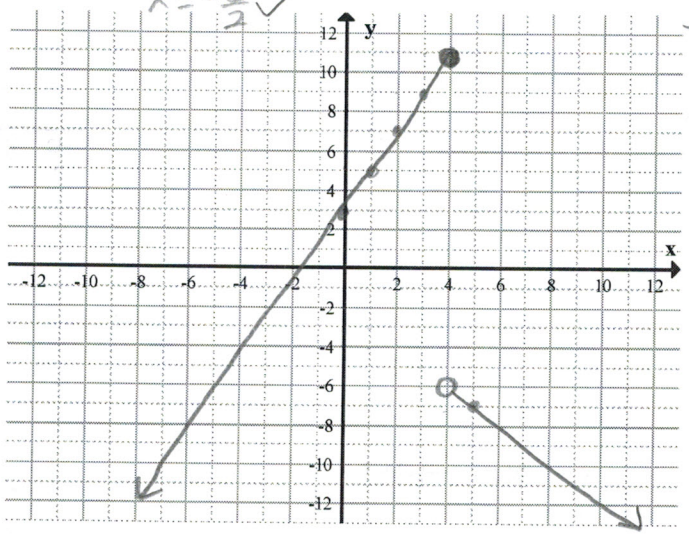
$(0,-\frac{3}{2})$

$(-\frac{3}{2})\le 4$

x-int
$-x-2=0$
$+2\ +2$
$-x=2$
$x=-2$

$-2>4$
false

c. Graph the function.



d. Based on the graph find the range.

$(-\infty, 10]$

e. Is the function continuous on its domain?

NO