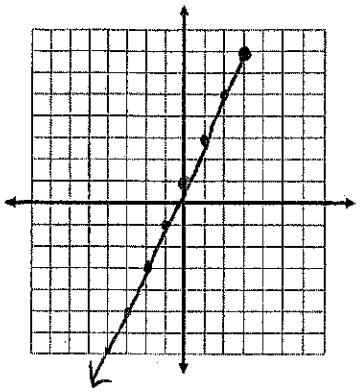
4.3 Graphing with Restricted Domains

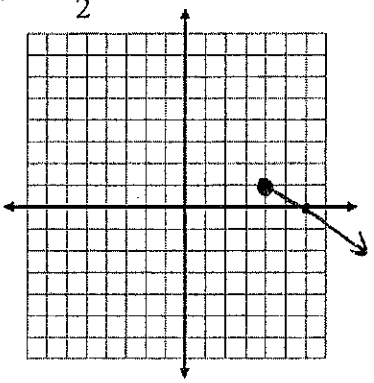
Name: Key Hr:____

Graph the following functions with their restricted domains.

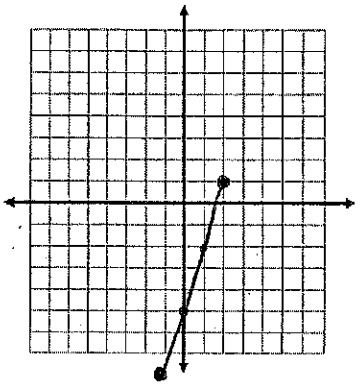
1. $y = 2x + 1, \quad x \le 3$



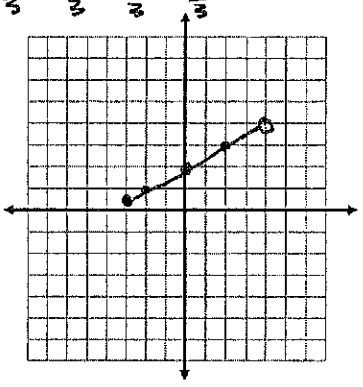
2. $y = -\frac{1}{2}x + 3, \quad x \ge 4$



3. $y = 3x - 5, \quad -1 \le x \le 2$



4. $\frac{3x}{3} - \frac{6y}{3} + \frac{12}{3} = \frac{0}{3}, \quad -3 \le x < 4$



$x - 2y + 4 = 0$

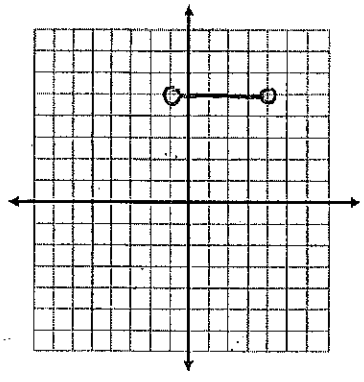
$-x \quad -x \quad -4$

$\frac{-2y}{-2} = \frac{-x}{-2} - \frac{4}{-2}$

$y = \frac{x}{2} + 2$

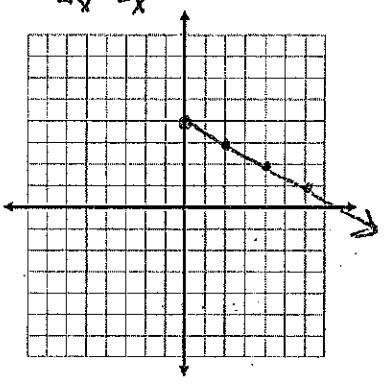
$y = \frac{1}{2}x + 2$

5. $y = 5, \quad -1, < x < 4$



6. $2y + x = 8, \quad x \ge 0$

$-x \quad -x$

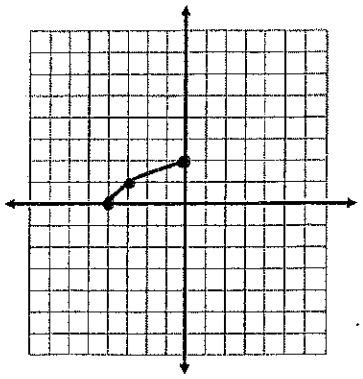


$\frac{2y}{2} = \frac{-x + 8}{2}$

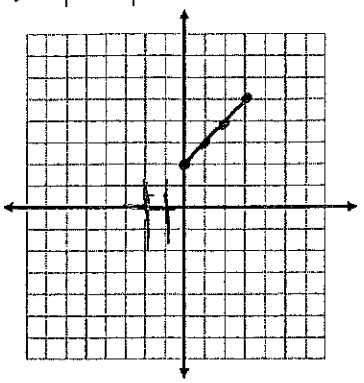
$y = -\frac{1}{2}x + 4$

Graph the following functions with their restricted domains.

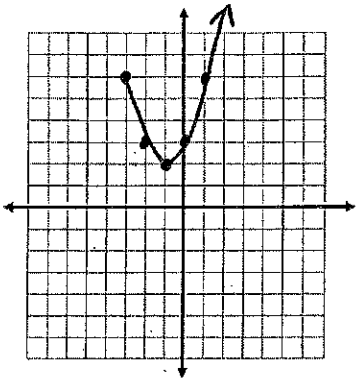
7. $y=\sqrt{x+4}, \quad -4\le x\le 0$



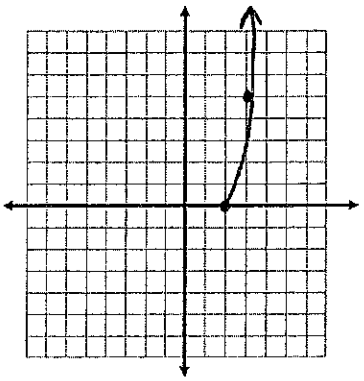
8. $y=|x+2|, \quad 0\le x\le 3$

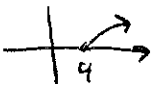


9. $y=(x+1)^2+2, \quad x\ge -3$

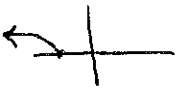


10. $y=x^2-4, \quad x\ge 2$

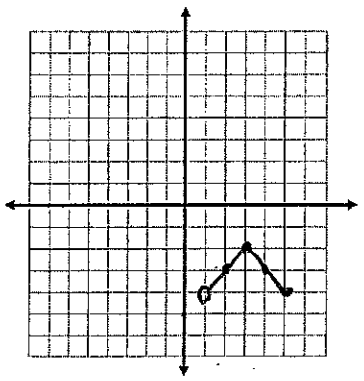




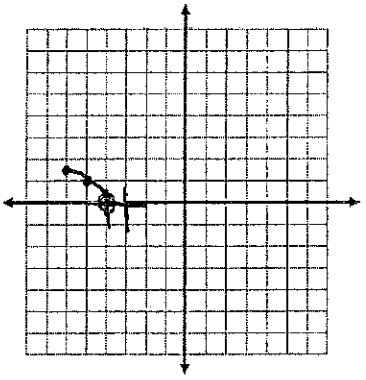
right 4,
reflect over y-axis



11. $y=-|x-3|-2, \quad 1<x\le 5$

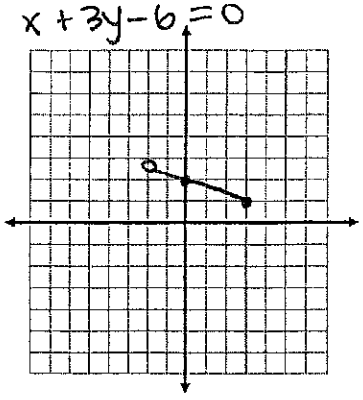


12. $y=\sqrt{-x-4}, \quad -6\le x<-4$



13. $3x+9y-18=0, \quad -2\le x\le 3$

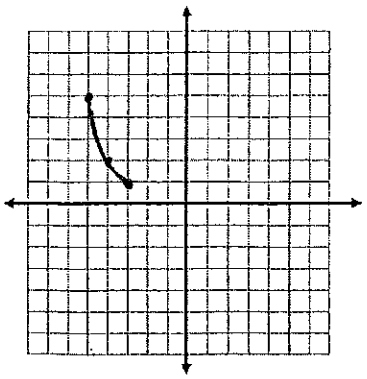
$x+3y-6=0$



$3y=-x+6$

$y=-\frac{1}{3}x+2$

14. $y=x^2+6x+10, \quad -5\le x<-3$



vertex: $\frac{-6}{2(1)}=\frac{-6}{2}=-3$

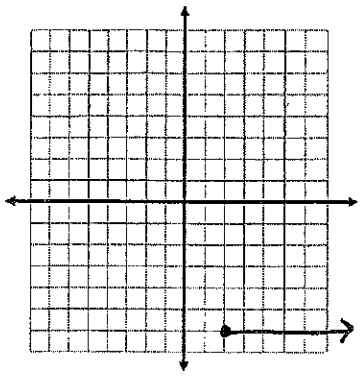
$(-3,$

$(-3)^2+6(-3)+10$

$9-18+10$

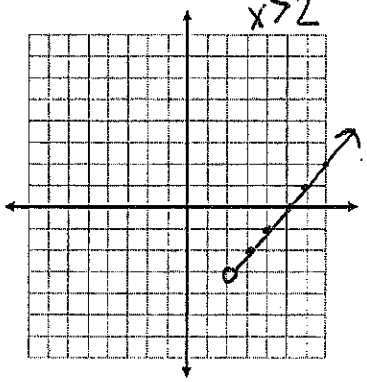
$(-3, 1)$

15. $y = -6, \quad x \geq 2$



16. $y = |x| - 5, \quad 2 < x$

x>2

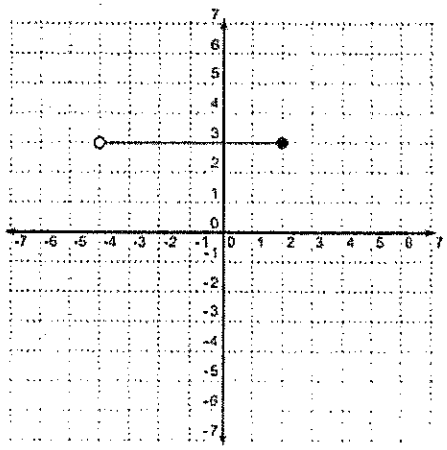


Write an equation with its restricted domain for each graph.

17.

y=3

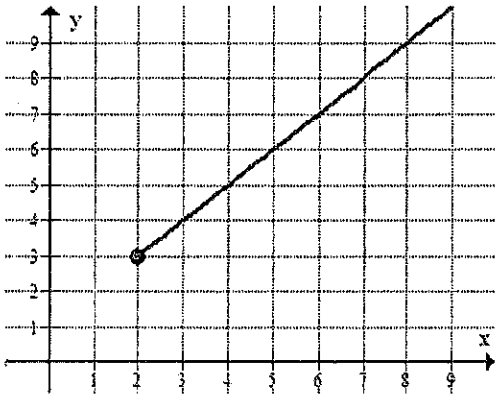
-4<x≤2



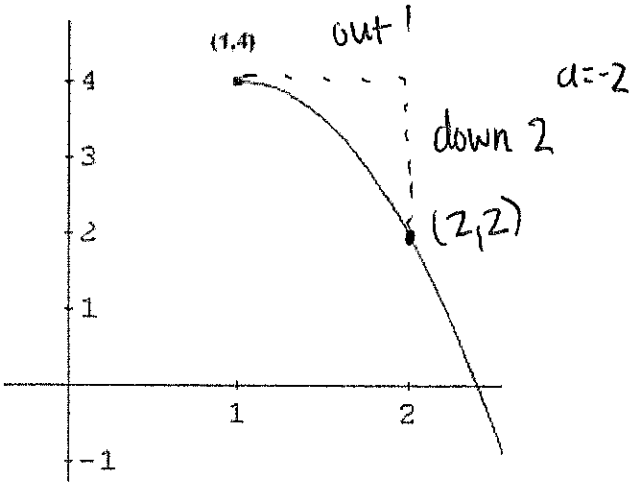
18.

y=x+1

x≥2



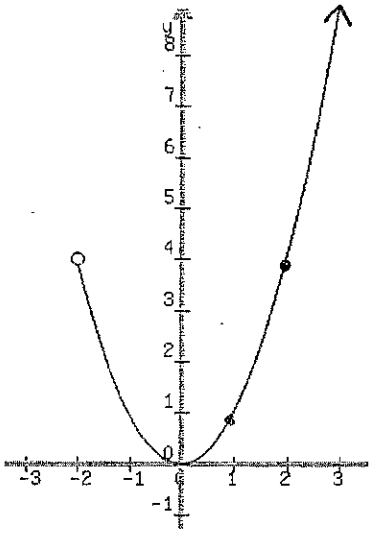
19.



$y = -2(x-1)^2 + 4$

$x \geq 1$

20.



$y = x^2$

$-2 < x$ or $x > -2$