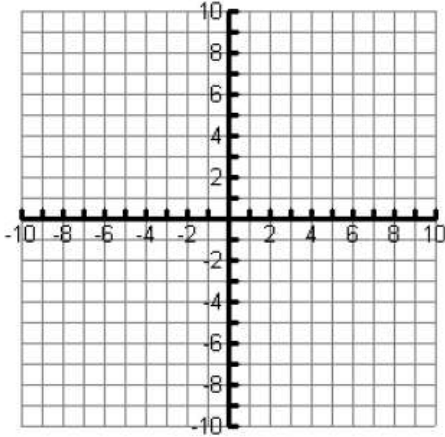


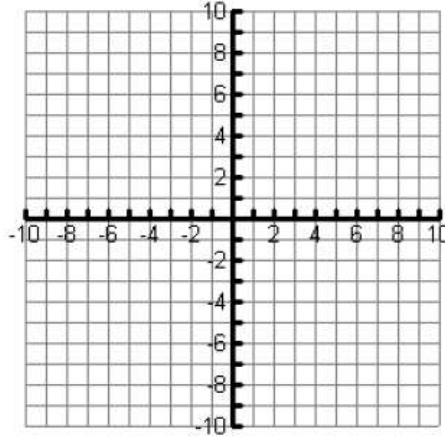
Alg2 HOMEWORK: Graphing Piecewise Functions

Graph #2, 6, 7, 9, 10, and 12. State the domain and range in both set and interval notation.

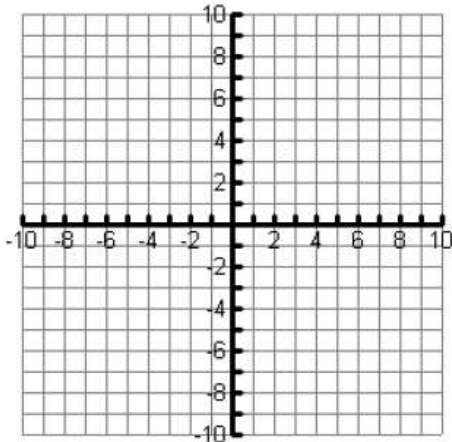
1. $f(x) = \begin{cases} -x & \text{if } x \leq 2 \\ x & \text{if } x > 2 \end{cases}$



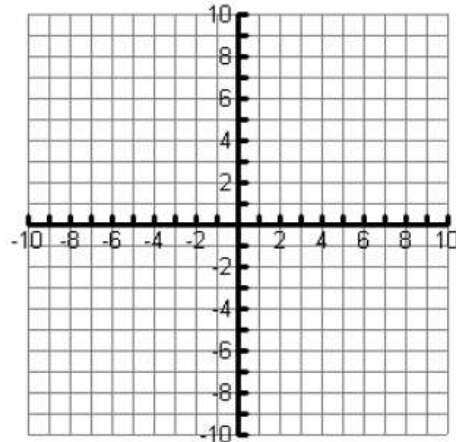
2. $f(x) = \begin{cases} 2, & x > -3 \\ -5, & x < -3 \end{cases}$



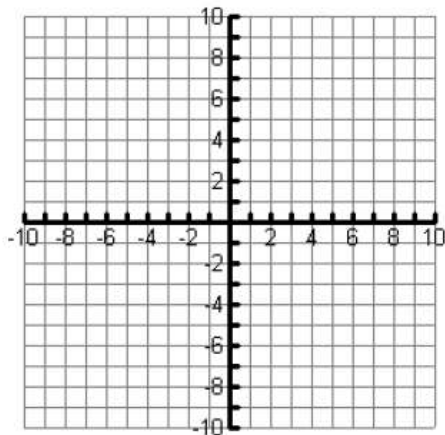
3. $f(x) = \begin{cases} -1, & x \leq -2 \\ 2, & x > -2 \end{cases}$



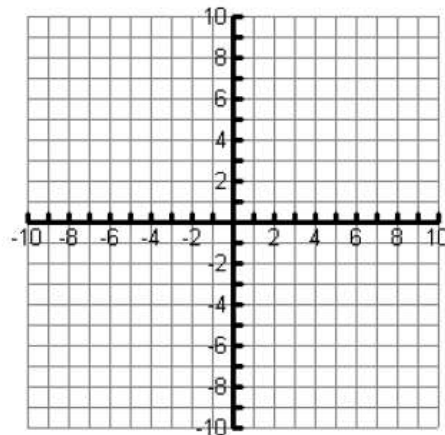
4. $f(x) = \begin{cases} -1, & x \leq -1 \\ 1, & -1 < x < 1 \\ x, & x > 1 \end{cases}$



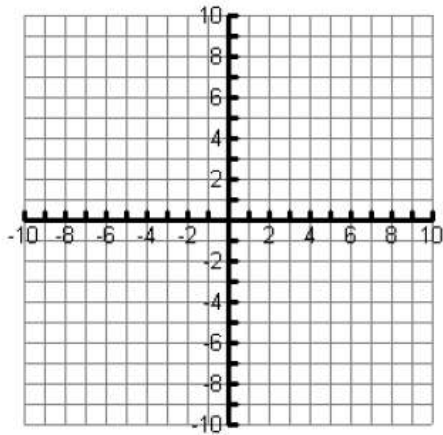
5. $f(x) = \begin{cases} -x + 2, & x \leq 0 \\ \frac{1}{2}x + 3, & x > 0 \end{cases}$



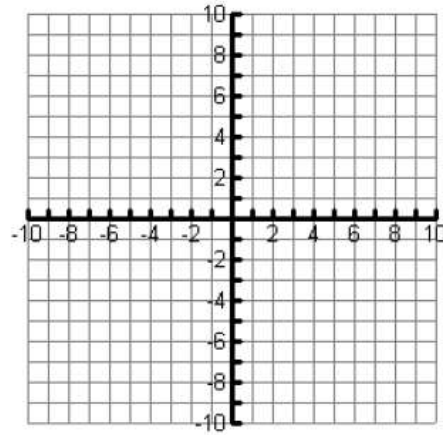
6. $f(x) = \begin{cases} x + 2, & x \leq 2 \\ -\frac{1}{2}x + 4, & x > 2 \end{cases}$



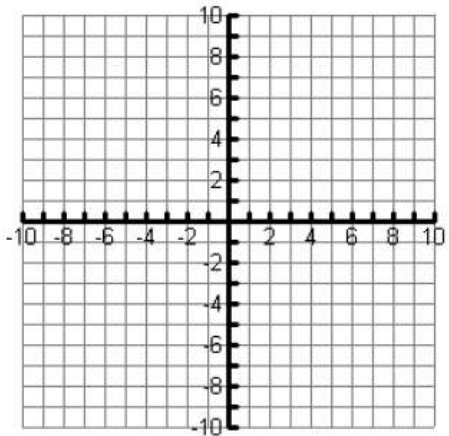
$$7. f(x) = \begin{cases} -3x - 4, & x \leq -2 \\ x + 1, & x > -2 \end{cases}$$



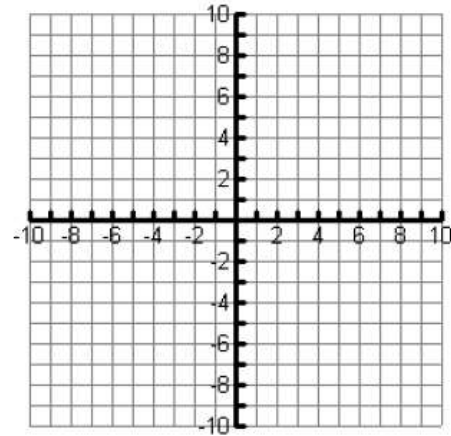
$$8. f(x) = \begin{cases} -x, & x \leq 0 \\ 2x - 2, & x > 0 \end{cases}$$



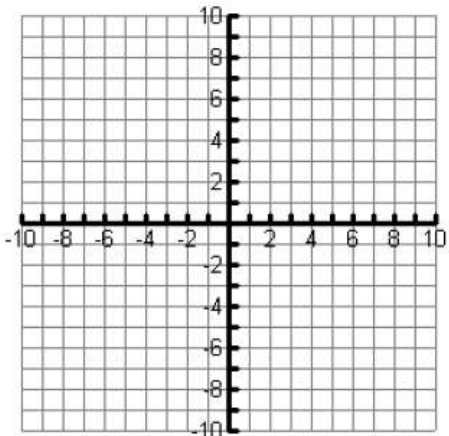
$$9. f(x) = \begin{cases} -x - 4, & x < -2 \\ -\frac{1}{2}x, & -2 \leq x \leq 2 \\ -1, & x > 2 \end{cases}$$



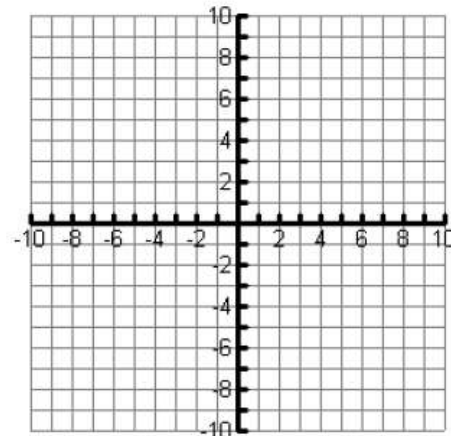
$$10. f(x) = \begin{cases} 3, & x < -1 \\ x + 1, & 1 \leq x \leq 4 \end{cases}$$



$$11. f(x) = \begin{cases} \frac{1}{2}x - 1, & x \neq 4 \\ 3, & x = 4 \end{cases}$$

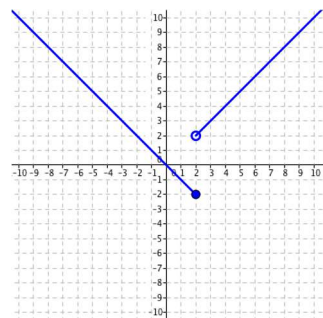


$$12. f(x) = \begin{cases} x + 4, & -6 \leq x < 2 \\ -6, & x = 2 \\ -x + 2, & x > 2 \end{cases}$$



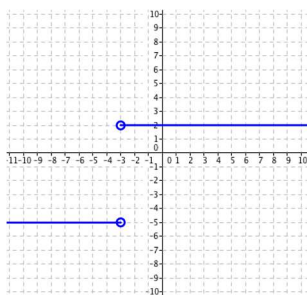
ANSWERS

1.



$$D: (-\infty, \infty), R: [-2, \infty)$$

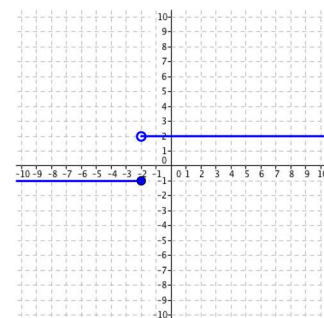
2.



$$D: (-\infty, -3) \cup (-3, \infty),$$

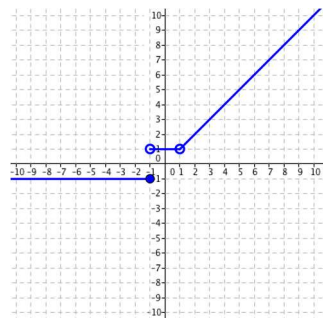
$$R: [-5, -5] \cup [2, 2]$$

3.



$$D: (-\infty, \infty), R: [-1, -1] \cup [2, 2]$$

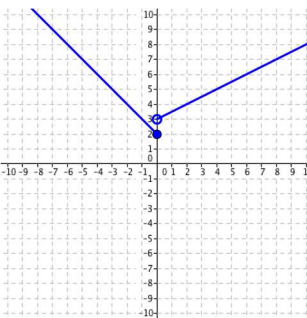
4.



$$D: (-\infty, 1) \cup (1, \infty),$$

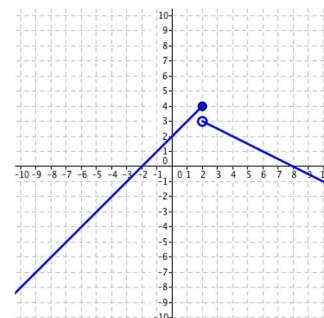
$$R: [-1, -1] \cup [1, \infty)$$

5.



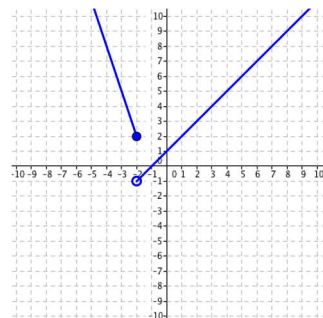
$$D: (-\infty, \infty), R: [2, \infty)$$

6.



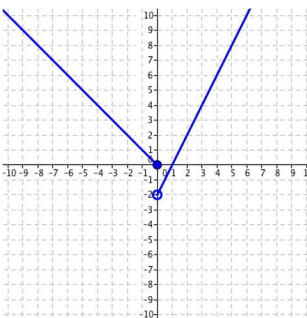
$$D: (-\infty, \infty), R: (-\infty, 4]$$

7.



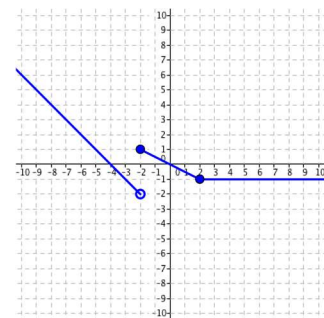
$$D: (-\infty, \infty), R: (-1, \infty)$$

8.



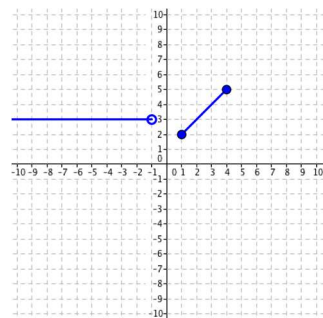
$$D: (-\infty, \infty), R: (-2, \infty)$$

9.



$$D: (-\infty, \infty), R: (-2, \infty)$$

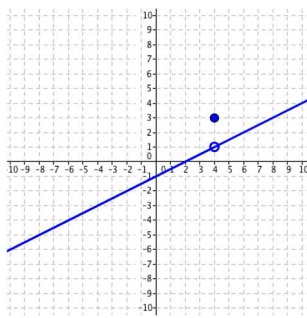
10.



$$D: (-\infty, -1) \cup [1, 4],$$

$$R: [2, 5]$$

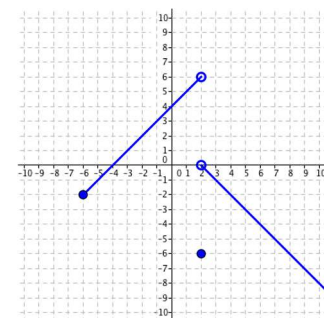
11.



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

$$R: (-\infty, 1) \cup (1, \infty)$$

12.



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