Math 3 - Extra Practice Unit 1

Graph the following functions.

1. $f(x) = 2|x+3| - 4$

2. $g(x) = \begin{cases} -3(x+2) - 1, & x < -2 \\ 3(x+2) - 1, & x \geq -2 \end{cases}$

3. $h(x) = |(x+9)^2 - 11|$

4. $m(x) = \begin{cases} (x-3)^2 - 1, & (-\infty, 1] \cup [5, \infty) \\ -(x-3)^2 + 7, & (1, 5) \end{cases}$

Determine the domain and range for each of the above functions.

5. $f(x)$: D_____ R_____

6. $g(x)$: D_____ R_____

7. $h(x)$: D_____ R_____

8. $m(x)$: D_____ R_____

Rewrite the functions above. If equation starts as an absolute value, rewrite as a PW. Do the same for the PW functions.

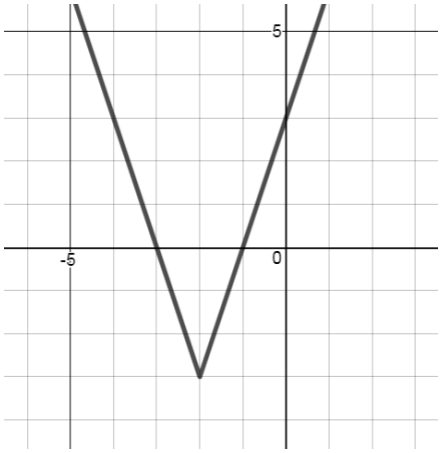
9. $f(x) = \{$

10. $g(x) = |\quad|$

11. $h(x) = \{$

12. $m(x) = |\quad|$

13. Write a PW and absolute value equation for this graph. Assume the domain is all real numbers.



14. Graph:

$$t(x) = \begin{cases} -2(x+4) + 2, [-10, -4] \\ -\frac{1}{4}(x+4), (-4, 2] \\ 3(x-2) + 4, (2, \infty) \end{cases}$$

Domain: _____

Range: _____