

Math Analysis I Honors

Name _____

Period _____

Worksheet - Piecewise Functions

Evaluate the following for $f(x) = \begin{cases} 3x - 5, & x > 4 \\ x^2, & x \leq 4 \end{cases}$:

1. $f(7)$

2. $f(4)$

3. $f(-3)$

Evaluate the following for $f(x) = \begin{cases} -2|x+1|, & x \leq 1 \\ 3, & 1 < x < 3 \\ 6-2x, & x \geq 3 \end{cases}$:

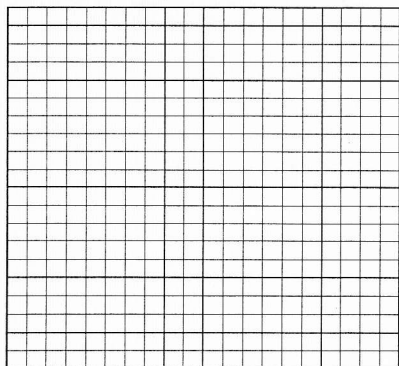
4. $f(10)$

5. $f(2)$

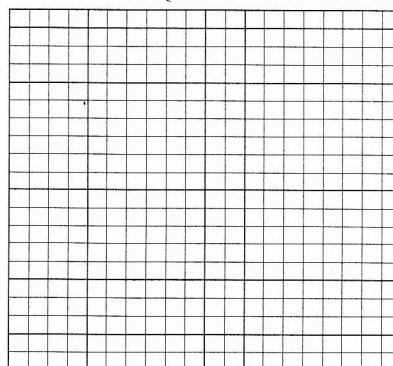
6. $f(0)$

Graph the following piecewise functions. Then find the domain, range, and zeros for each. (Interval Notation)

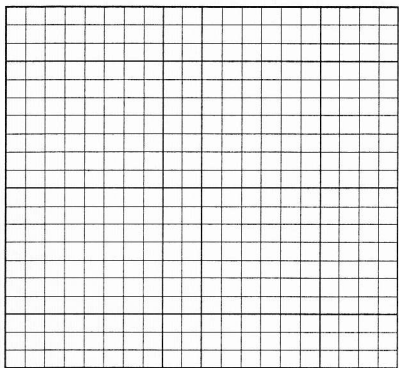
7. $f(x) = \begin{cases} -2, & x < 0 \\ 3, & x \geq 0 \end{cases}$



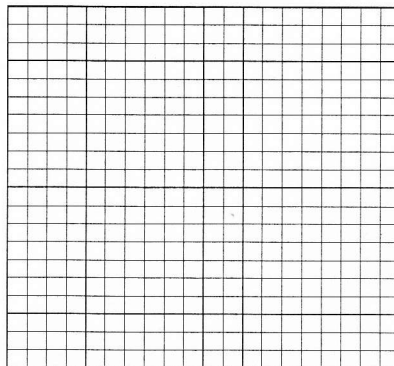
8. $g(x) = \begin{cases} -x+2, & x < 2 \\ x-2, & x \geq 2 \end{cases}$



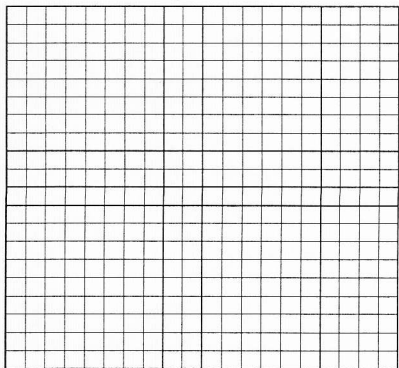
$$9. h(x) = \begin{cases} -3x+2, & x \leq 2 \\ \frac{1}{2}x-4, & x > 2 \end{cases}$$



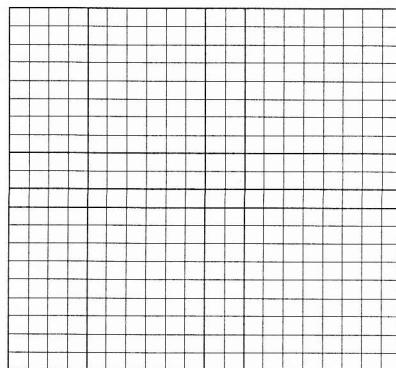
$$10. f(x) = \begin{cases} 4, & x \leq -2 \\ x^2, & -2 < x < 2 \\ 4, & x \geq 2 \end{cases}$$



$$11. g(x) = \begin{cases} 3x+12, & x \leq -3 \\ |x|, & -3 < x < 3 \\ -3x+12, & x \geq 3 \end{cases}$$



$$12. h(x) = \begin{cases} x^2-4, & x < 3 \\ \frac{2}{3}x-5, & x \geq 3 \end{cases}$$



13. Find the domain of each function. (Interval Notation)

$$a) f(x) = \frac{x-2}{x+10}$$

$$d) f(x) = x^3 - 4x$$

$$b) f(x) = x^2 + 2x - 7$$

$$e) f(x) = \frac{6}{x^2 - x - 12}$$

$$c) f(x) = \sqrt{8-x} + 3$$

$$f) f(x) = 9 - \sqrt{x+5}$$