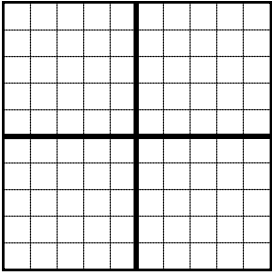


Name: _____

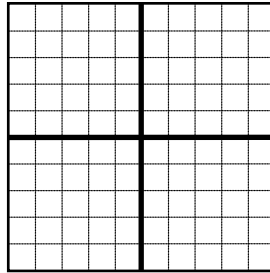
HW4: Piecewise Functions Worksheet

Graph the following functions and determine for what numbers, if any, the given function is discontinuous. Show the steps to support your conclusion:

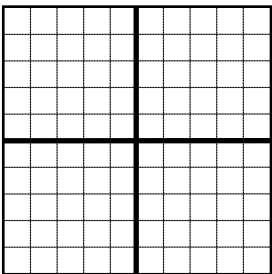
1.
$$P(x) = \begin{cases} 3x+1, & x < 2 \\ -x^2+11, & x \geq 2 \end{cases}$$



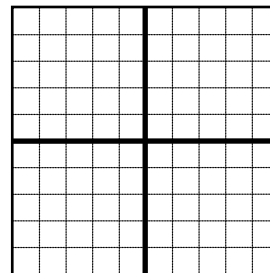
2.
$$f(x) = \begin{cases} |x|, & x \leq 1 \\ 1, & x > 1 \end{cases}$$



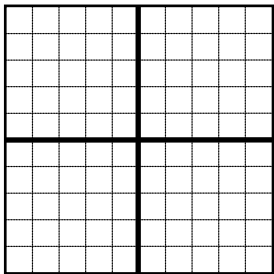
3.
$$g(x) = \begin{cases} -4, & x \leq 0 \\ x^2 - 4, & 0 < x \leq 1 \\ -x, & x > 1 \end{cases}$$



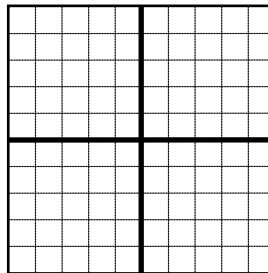
4.
$$g(x) = \begin{cases} -2, & x < -3 \\ \frac{2}{3}x, & -3 \leq x \leq 3 \\ 2, & x > 3 \end{cases}$$



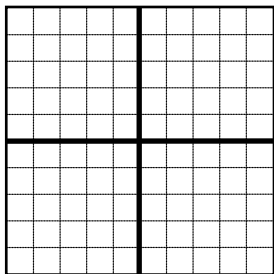
$$5. f(x) = \begin{cases} 4, & 0 \leq x \leq 5 \\ -x+9, & 5 < x \leq 8 \\ \sqrt{x-7}, & 8 < x \leq 11 \end{cases}$$



$$6. h(x) = \begin{cases} 4, & x = -4, -3, -2 \\ x^2, & x = -1, 0, 1 \\ -x+6, & x = 2, 3, 4 \end{cases}$$



$$7. f(x) = \begin{cases} \frac{1}{x}, & x < 0 \\ x^2, & 0 \leq x < 1 \\ 2, & x = 1 \\ 2-x, & x > 1 \end{cases}$$



$$8. h(x) = \begin{cases} -x^3, & x < 0 \\ -2x, & 0 \leq x < 3 \\ (x-3)^2, & x \geq 3 \end{cases}$$

