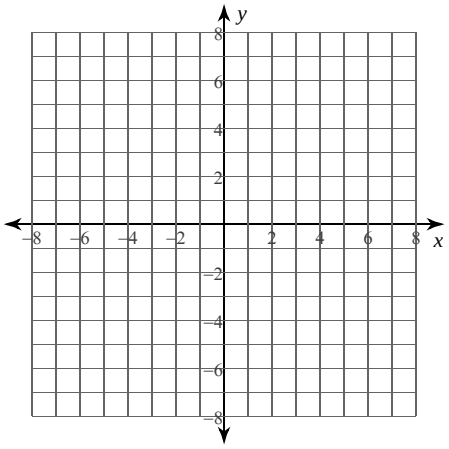
Name_____

Piecewise Functions

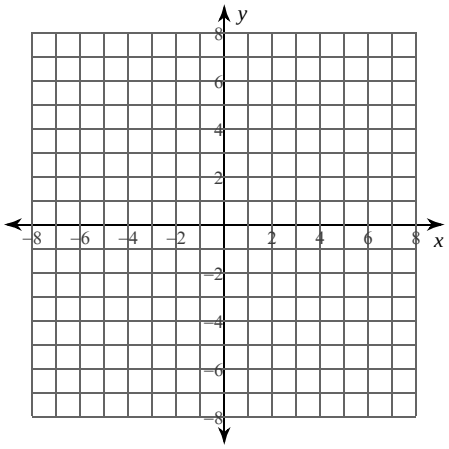
Date_____ Period____

Sketch the graph of each function.

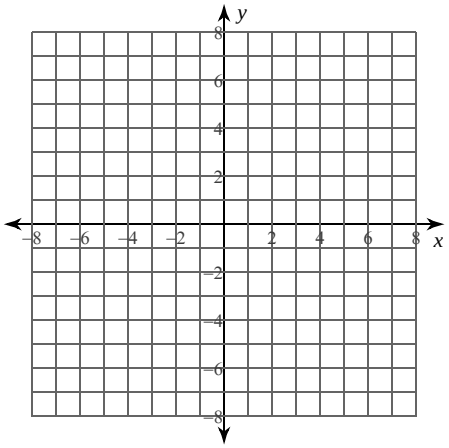
1) $f(x) = \begin{cases} -2x - 1, & x \le 2 \\ -x + 4, & x > 2 \end{cases}$



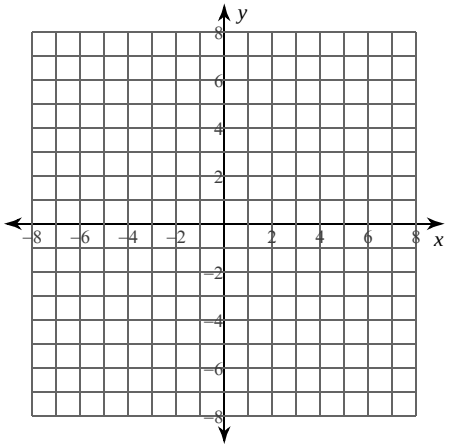
2) $f(x) = \begin{cases} -4, & x \le -2 \\ x - 2, & -2 < x < 2 \\ -2x + 4, & x \ge 2 \end{cases}$



3) $f(x) = \begin{cases} -2^x, & x < -4 \\ -|x|, & -4 \le x \le 0 \\ 4 - x^2, & x > 0 \end{cases}$



4) $g(x) = \begin{cases} -6, & x < -2 \\ (x + 1)^4, & x \ge -2 \end{cases}$



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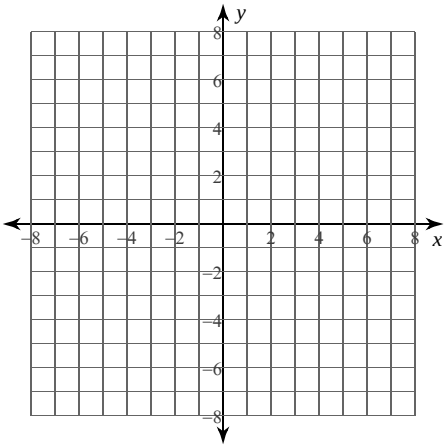
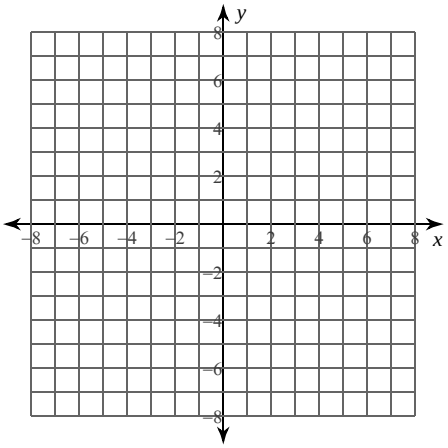
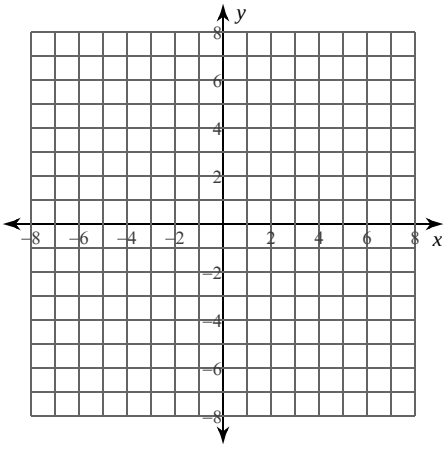


6) $h(x) = \begin{cases} 2^x, & x < -3 \\ \dfrac{3}{x}, & x \ge -3 \end{cases}$



7) $w(x) = \begin{cases} \dfrac{|x|}{2}, & x \le -4 \\ \sqrt{-x}, & -4 < x < 2 \\ |x-2|, & x \ge 2 \end{cases}$



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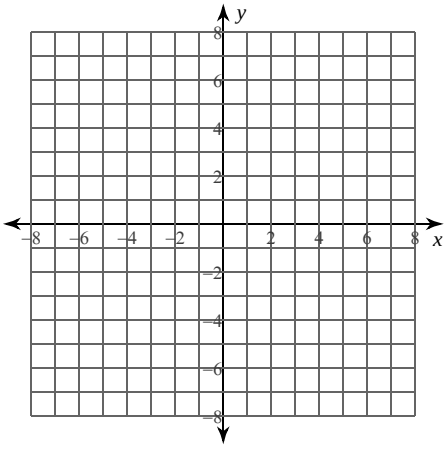

Critical thinking questions:

9) Write a rule for the sign function $s(n)$:
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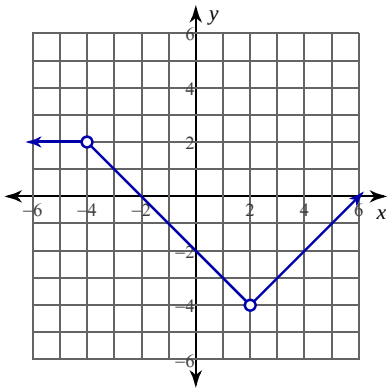
10) Write a rule for the function shown.



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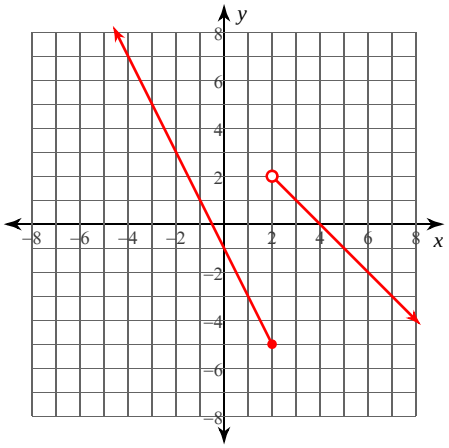

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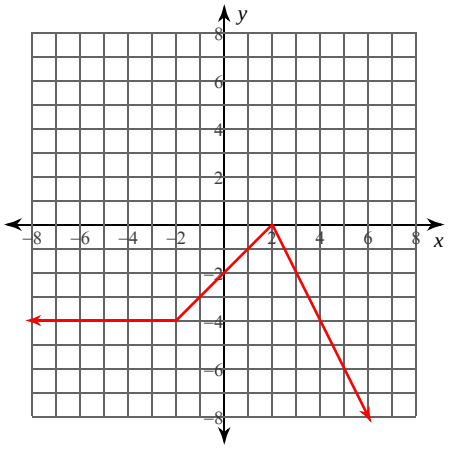

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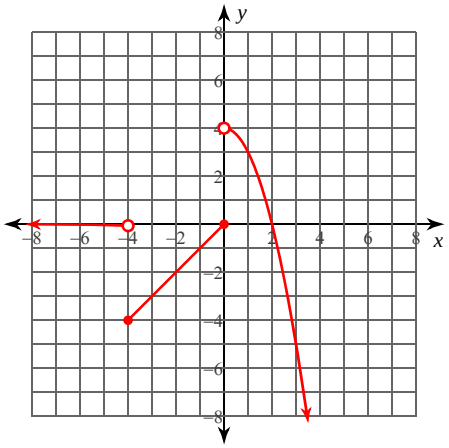

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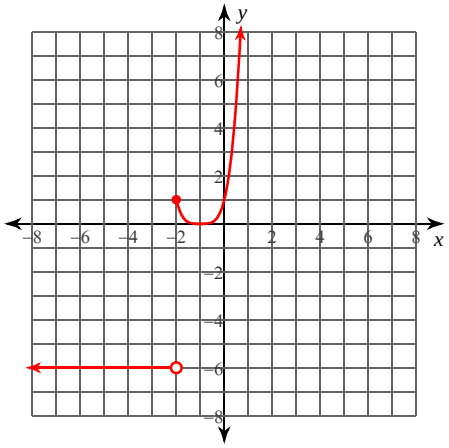

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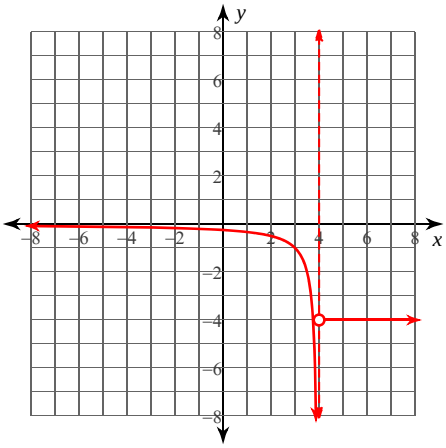

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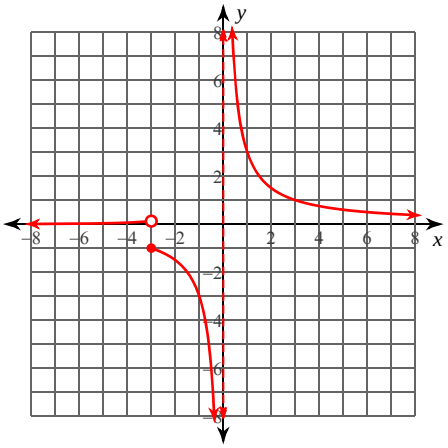

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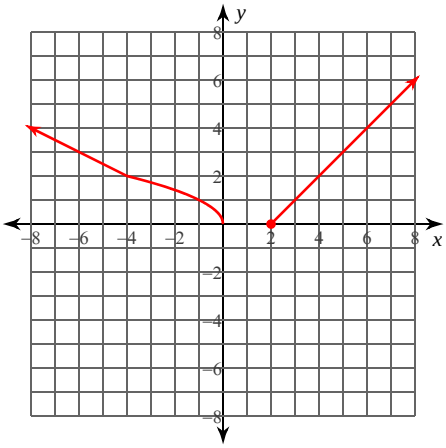

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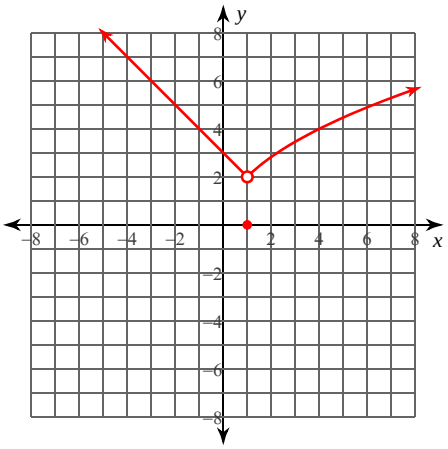

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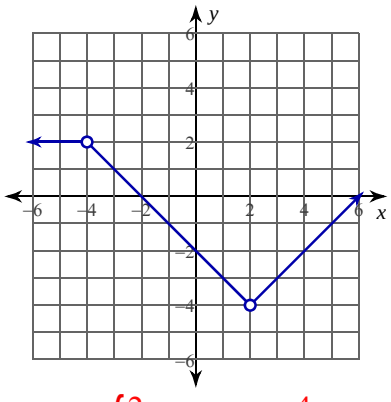

$$f(x) = \begin{cases} 2, & x < -4 \\ -x - 2, & -4 < x < 2 \\ x - 6, & x > 2 \end{cases}$$