Graphing Piecewise Functions

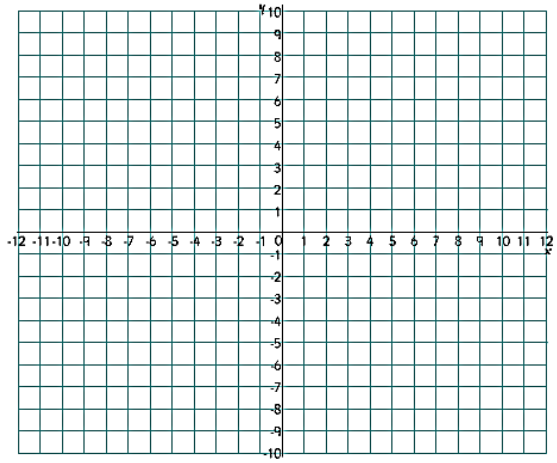
Honors Advanced Algebra

Name: _____

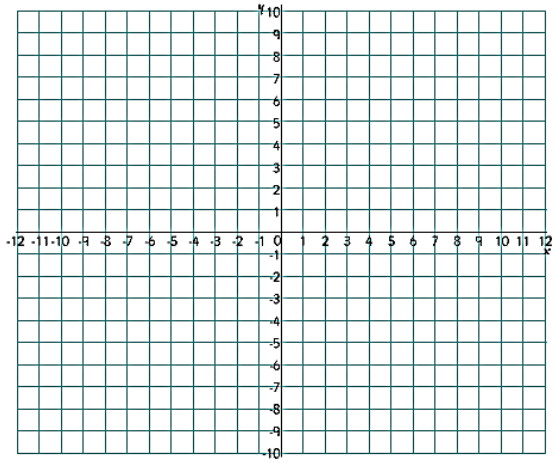
Period: _____ Date: _____

Graph each of the following piecewise functions under the given condition(s). State the domain and range of each.

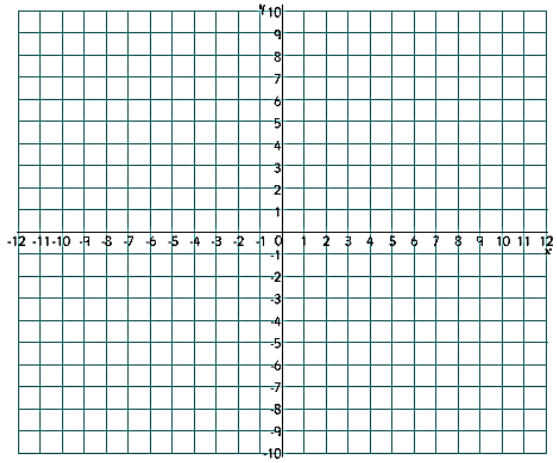
Example: $f(x) = \begin{cases} x, & x < -2 \\ 2x + 3, & -2 \leq x < 2 \\ 4, & x \geq 2 \end{cases}$



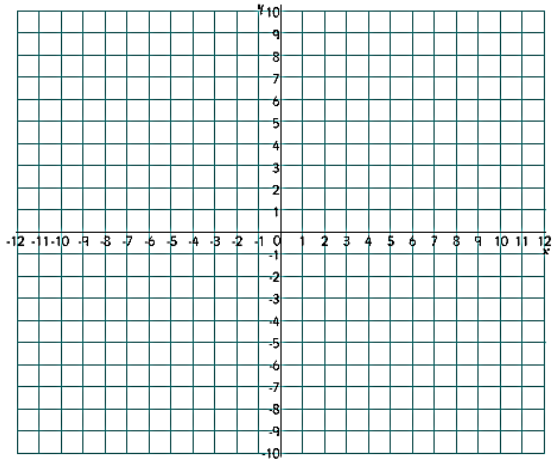
1. $f(x) = 3x + 1, x \leq 1$



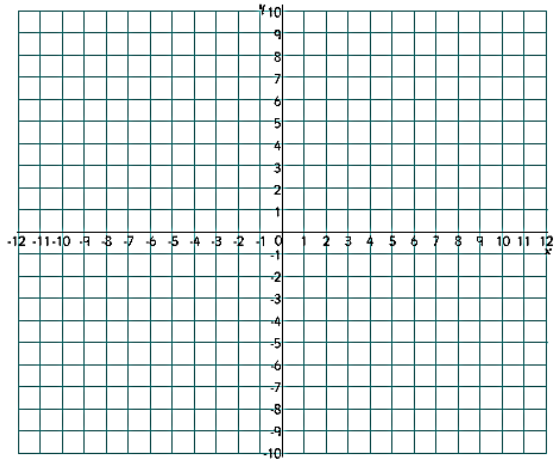
2. $f(x) = -x - 2, \ -4 < x \leq 4$



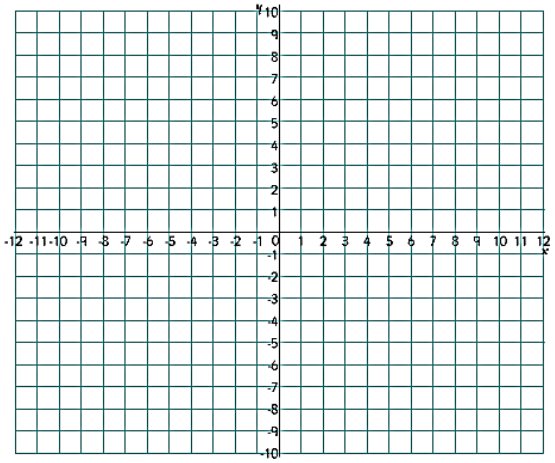
3. $f(x) = \frac{1}{2}x - 4, x \geq -2$



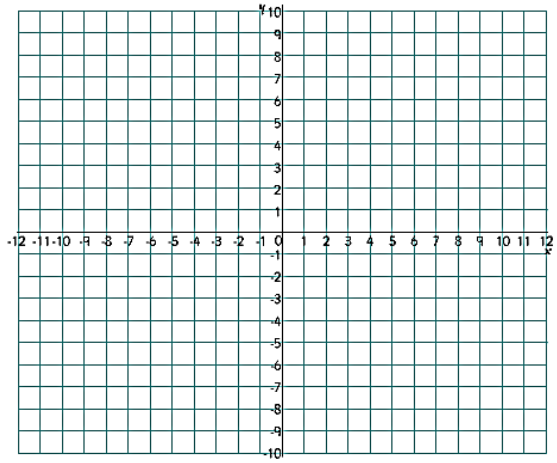
4. $f(x) = -\frac{2}{3}x + 5, x < 6$



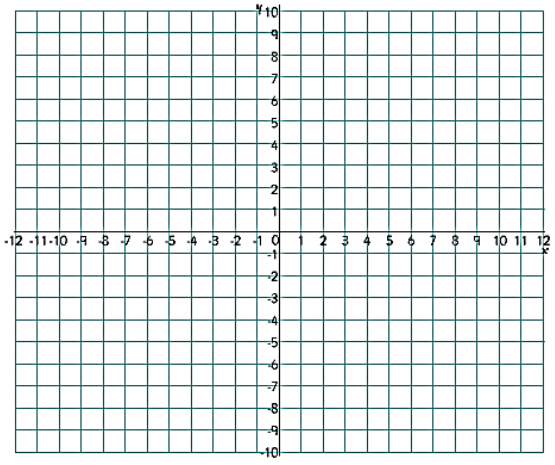
5. $f(x) = 4x, x \leq 1$



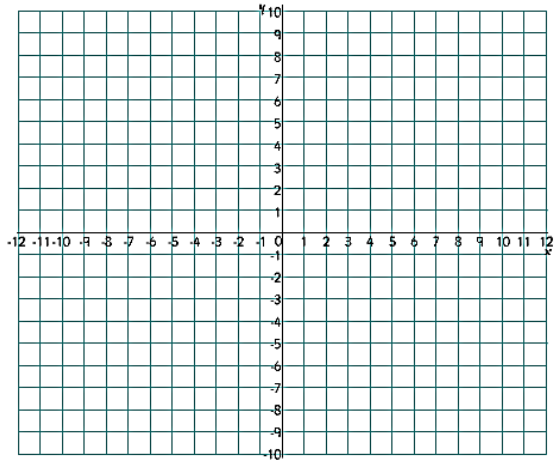
6. $f(x) = 6, -5 \leq x < 3$



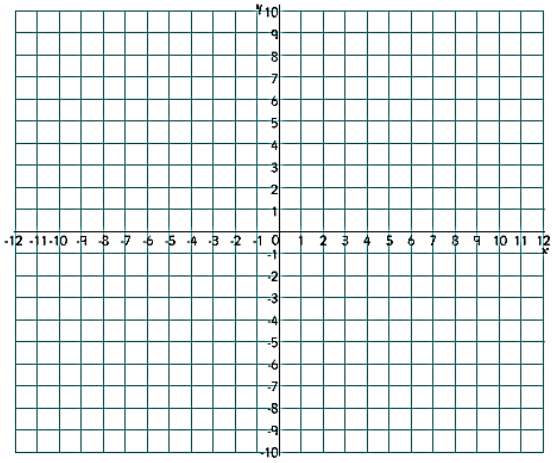
7. $f(x) = \begin{cases} 3x + 1, & x \geq 1 \\ -2x + 3, & x < 1 \end{cases}$



8. $f(x) = \begin{cases} -\frac{1}{3}x, & x < -6 \\ x + 4, & -6 \leq x < 1 \\ 2, & x \geq 1 \end{cases}$



9. $f(x) = \begin{cases} -4, & -7 < x \leq -4 \\ -2, & -4 < x \leq -1 \\ 0, & -1 < x \leq 2 \\ 2, & 2 < x \leq 5 \\ 4, & 5 < x \leq 8 \end{cases}$



10. $f(x) = \begin{cases} x + 3, & -7 < x \leq -4 \\ x + 2, & -4 < x \leq -1 \\ x + 1, & -1 < x \leq 2 \\ x, & 2 < x \leq 5 \end{cases}$