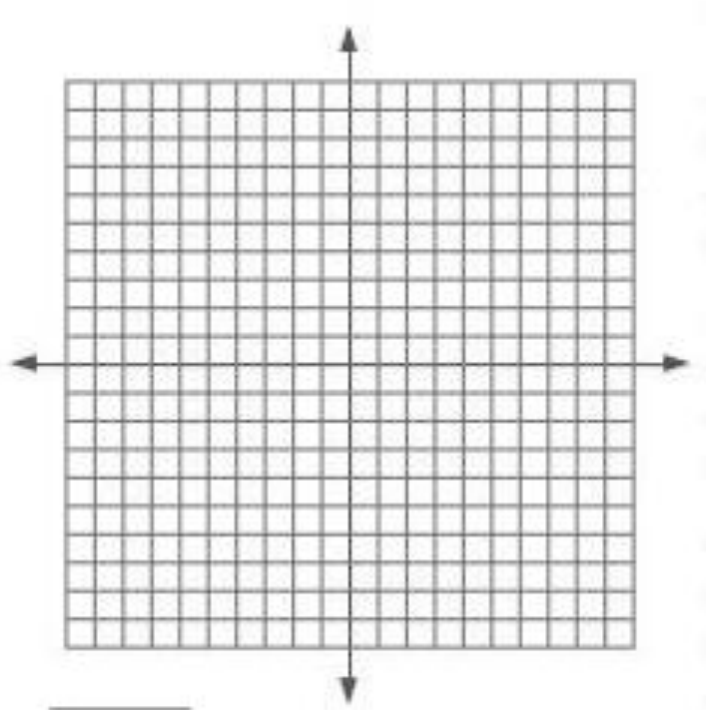


Piecewise Functions

Name _____

1) Sketch the graph of $f(x) = \begin{cases} -\frac{1}{2}x + 2, & x \leq -2 \\ x - 3, & x > -2 \end{cases}$



Classwork/Homework

Graphing a Piecewise-Defined Function In Exercises 35–40, sketch the graph of the function.

35. $g(x) = \begin{cases} x + 6, & x \leq -4 \\ \frac{1}{2}x - 4, & x > -4 \end{cases}$

36. $f(x) = \begin{cases} \sqrt{4+x}, & x < 0 \\ \sqrt{4-x}, & x \geq 0 \end{cases}$

37. $f(x) = \begin{cases} 1 - (x-1)^2, & x \leq 2 \\ \sqrt{x-2}, & x > 2 \end{cases}$

38. $f(x) = \begin{cases} x^2 + 5, & x \leq 1 \\ -x^2 + 4x + 3, & x > 1 \end{cases}$

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

40. $k(x) = \begin{cases} 2x + 1, & x \leq -1 \\ 2x^2 - 1, & -1 < x \leq 1 \\ 1 - x^2, & x > 1 \end{cases}$

43. **Wages** A mechanic's pay is \$14.00 per hour for regular time and time-and-a-half for overtime. The weekly wage function is

$$W(h) = \begin{cases} 14h, & 0 < h \leq 40 \\ 21(h - 40) + 560, & h > 40 \end{cases}$$

where h is the number of hours worked in a week.

- (a) Evaluate $W(30)$, $W(40)$, $W(45)$, and $W(50)$.
- (b) The company increased the regular work week to 45 hours. What is the new weekly wage function?