1. A homeowner mows his lawn each Wednesday. Sketch a graph of the grass-height function, as a function over 4 weeks' time.
2. Let $f(x) = 3x^2 - x + 2$. Evaluate $f(2)$, $f(-2)$, $f(a)$, $f(-a)$, $f(a+1)$.

Find the domain and sketch

3. $g(x) = \sqrt{x-5}$
4. $f(x) = \begin{cases} x+2 & \text{if } x < 0 \\ 1-x & \text{if } x \geq 0 \end{cases}$
5. $f(x) = \begin{cases} x+2 & \text{if } x \leq -1 \\ x^2 & \text{if } x > -1 \end{cases}$

Find an expression for the function whose graph is described in words or pictures.

6. The line segment from (1,-3) to (5,7).
7. The bottom half of the parabola $x + (y-1)^2 = 0$
8. The piecewise-defined function on the right.

Find a formula for the function described. State its domain.

9. A rectangle with perimeter $P = 20$ meters. The function in question gives the area of the rectangle as a function of one of its sides.
10. An open rectangular box has a square base and volume 2 cubic meters. Express its surface area $S$ as a function of the length of one of its sides.
11. A rectangle of cardboard is 12 inches by 20 inches. Squares of length and width $x$ are cut out of its corners and the sides are folded up to form an open box. Express the volume $V$ of this box as a function of the length $x$ of the cuts made in the corners.
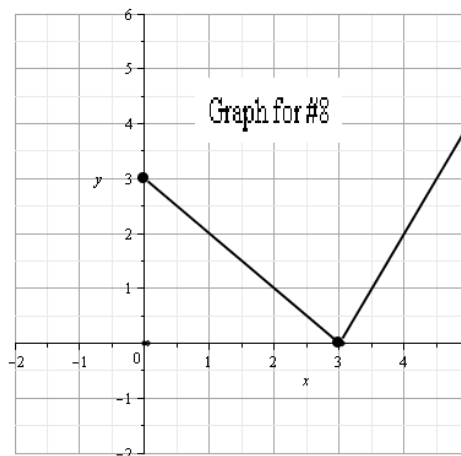
Determine whether the function is odd, even or neither.

12. $f(x) = \dfrac{x}{x^2 + 1}$.
13. $f(x) = 1 + 3x^2 - x^4$