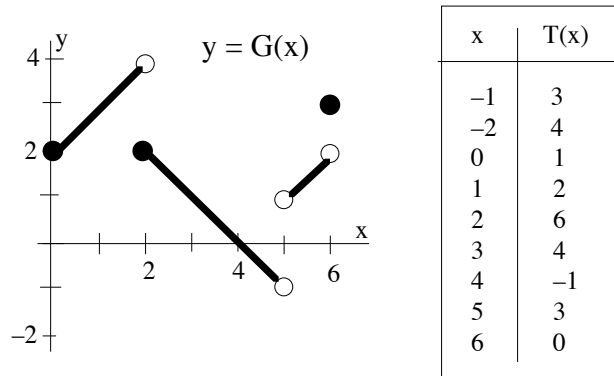


Functions: The Four-Fold Way



$$f(x) = x^2 + 3x$$

W: doubles the input and adds one

Use the information given above to evaluate the following.

$$G(0) = \mathbf{2}$$

$$G(2) = \mathbf{2}$$

$$G(5) = \mathbf{undefined}$$

$$T(4) = \mathbf{-1}$$

$$T(6) = \mathbf{0}$$

$$f(2) = \mathbf{10}$$

$$W(1) = \mathbf{3}$$

$$W(0) = \mathbf{1}$$

$$G(6) = \mathbf{3}$$

$$f(G(6)) = \mathbf{18}$$

$$T(f(1)) = \mathbf{-1}$$

$$W(T(4)) = \mathbf{-1}$$

$$T(f(2) - 5) = \mathbf{3}$$

$$G(2) + G(4) = \mathbf{2}$$

$$G(2+4) = \mathbf{3}$$

$$f(T(1)) = \mathbf{10}$$

$$\{G(2)\}^2 = \mathbf{4}$$

$$G(2^2) = \mathbf{0}$$

$$f(2a) = \mathbf{4a^2 + 6a}$$

$$W(c) = \mathbf{2c + 1}$$

$$W(x+3) = \mathbf{2x + 7}$$

$$f(x+a) = \mathbf{(x+a)^2 + 3(x+a)}$$

$$T(f(1) + W(0)) = \mathbf{3}$$

$$G(W(2)) = \mathbf{undefined}$$

$$f(T(W(G(3)))) = \mathbf{28}$$

$$G(G(1)) = \mathbf{1}$$

$$W(W(3)) = \mathbf{15}$$

$$f(f(x)) = \mathbf{(x^2+3x)^2 + 3(x^2+3x)}$$

$$T(1 + f(1)) = \mathbf{3}$$

$$f(a+2) = \mathbf{(a+2)^2 + 3(a+2)}$$

$$W(G(6)) = \mathbf{7}$$