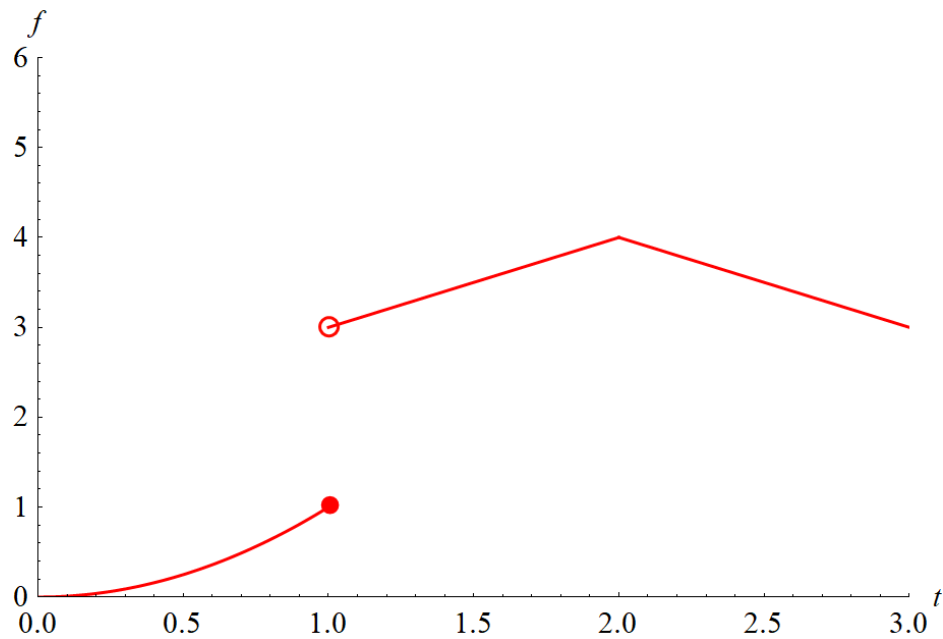


## Problem 1

In each of Problems 1 through 4, sketch the graph of the given function. In each case determine whether  $f$  is continuous, piecewise continuous, or neither on the interval  $0 \leq t \leq 3$ .

$$f(t) = \begin{cases} t^2, & 0 \leq t \leq 1 \\ 2 + t, & 1 < t \leq 2 \\ 6 - t, & 2 < t \leq 3 \end{cases}$$

### Solution



This function is piecewise continuous because it can be split up into a finite number of intervals where it is continuous. Also, the limit at each of the endpoints is finite.