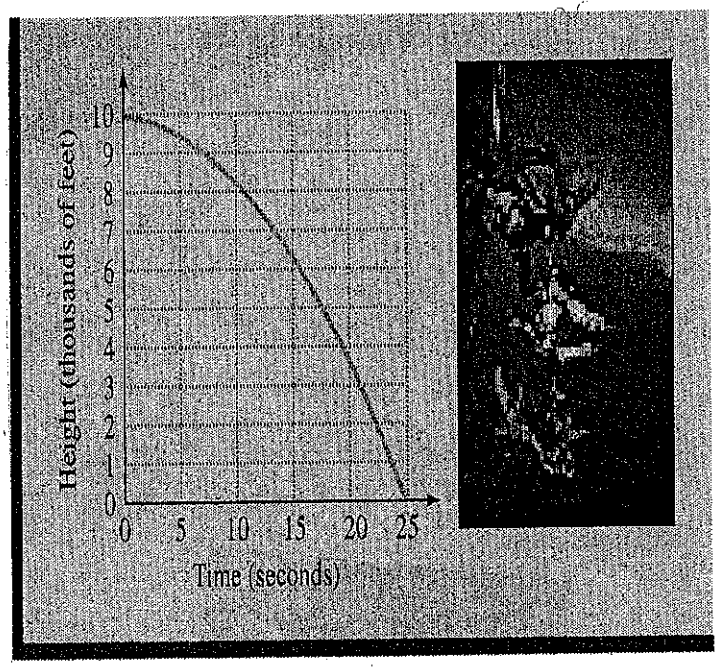
she falls?



Skydiving. If there were no air resistance, then the height (in feet) above the earth for a skydiver t seconds after jumping from an airplane at 10,000 feet would be given by

$$h(t) = -16t^2 + 10{,}000.$$

a) Find the time that it would take to fall to earth with no air resistance; that is, find t for which $h(t) = 0$. A skydiver actually gets about twice as much free fall time due to air resistance.

b) Use the accompanying graph to determine whether the skydiver (with no air resistance) falls farther in the first 5 seconds or the last 5 seconds of the fall.

c) Is the skydiver's velocity increasing or decreasing as she falls?