P2.2-7) Upon landing a jetliner, the pilot extends the craft's wing flaps and applies reverse thrust to slow the plane down. During this coast-down, the jetliner has an acceleration given by $a = -.003v^2$ m/s² where the velocity v is in m/s.

    a) Determine the time it takes the plane's velocity to decrease from 100 m/s to 20 m/s.
    b) Determine the distance traveled by the plane during that time.

Given:

Find:

Solution:

Determine the time it takes for the plane to go from 100 m/s to 20 m/s.	**Determine the distance the jetliner travels in this time period.**
Circle the equation that you will use? Note that the equation may have to be rearranged to be useful.	Circle the equation that you will use? Note that the equation may have to be rearranged to be useful.
$v = \dfrac{ds}{dt}$ $a = \dfrac{dv}{dt}$ $a\,ds = v\,dv$	$v = \dfrac{ds}{dt}$ $a = \dfrac{dv}{dt}$ $a\,ds = v\,dv$
$\Delta t =$ _____	$\Delta s =$ _____