P2.1-5)^{fe} The acceleration of a particle is given by $a = -n^2 s$, where s is the particle's position. Find the velocity of the particle as a function of position if the particle starts at time t_o from a position of s_o with a velocity of v_o.

Given:

Find:

Solution:

Derive the particle's velocity as a function of position.

Circle the equation that you will use?

$$v = \frac{ds}{dt} \qquad a = \frac{dv}{dt} \qquad a\,ds = v\,dv$$

What are your limits of integration?

Position limits
  ➢ Low _____
  ➢ High _____

Velocity limits
  ➢ Low _____
  ➢ High _____

$v(s) =$ _____