

**WRITE YOUR ANSWERS HERE!**

12.1.  $y_u = \frac{11.00}{2.00}$  (5)  
 $y_l = \frac{2.00}{2.00}$

\_\_\_\_\_ Solution \_\_\_\_\_

12.2.  $y_u = \frac{19.98}{1.7}$  (5)  
 $y_l = \frac{1.7}{1.7}$

\_\_\_\_\_ Solution \_\_\_\_\_

You can use a spreadsheet for this problem.

12.3.  $y_c = \frac{2.00}{1.00}$  (5)  
 \_\_\_\_\_ Solution \_\_\_\_\_

12.4.  $y_c = \frac{2.00}{1.00}$  (5)  
 \_\_\_\_\_ Solution \_\_\_\_\_

12.5.  $p_c/\gamma = \frac{2.00}{1.00}$  (5)  
 \_\_\_\_\_ Solution \_\_\_\_\_

1)  $\frac{1}{2} \frac{d}{dt} \left( \frac{1}{2} m v^2 \right) = \frac{1}{2} m v \frac{dv}{dt}$   
 $\frac{1}{2} m v \frac{dv}{dt} = \frac{1}{2} m v \frac{dv}{dt}$

2)  $\frac{1}{2} m v^2 = \frac{1}{2} m v_0^2 + \int_{t_0}^t F v dt$   
 $\frac{1}{2} m v^2 = \frac{1}{2} m v_0^2 + \int_{t_0}^t F v dt$

3)  $\frac{1}{2} m v^2 = \frac{1}{2} m v_0^2 + \int_{t_0}^t F v dt$   
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4)  $\frac{1}{2} m v^2 = \frac{1}{2} m v_0^2 + \int_{t_0}^t F v dt$   
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5)  $\frac{1}{2} m v^2 = \frac{1}{2} m v_0^2 + \int_{t_0}^t F v dt$   
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