p @ 14 sec = 1344 psi

$h = 0.01 \quad p(0) = 14.7$

$$\frac{dp}{dt} = \frac{\sqrt{(14.7+95t)^2 - p^2}}{\sqrt{0.63}}$$

$$y' = \frac{\sqrt{(14.7+95t)^2 - p^2}}{\sqrt{0.63}}$$

$$f(t,p) = \frac{\sqrt{(14.7+95t)^2 - p^2}}{\sqrt{0.63}} \quad \text{Note } t_0 = 0,\ p_0 = 14.7$$

$$f_0 = f(0, 14.7) = \frac{\sqrt{(14.7+95(0))^2 - 14.7^2}}{\sqrt{0.63}} = \frac{\sqrt{14.7^2 - 14.7^2}}{\sqrt{0.63}} = 0$$

$$p_1 = p_0 + h f_0 = 14.7 + (0.01)(0) = 14.7$$

Approximation at $t_1 = 0.1$ is $p_1 = 14.7$

Next step

$$f_1 = f(0.01, 14.7) = \frac{\sqrt{(14.7+95(0.01))^2 - (14.7)^2}}{\sqrt{0.63}} =$$

$$p_2 = p_1 + 0.01(f_1) = \frac{\sqrt{28.8325}}{\sqrt{0.63}} = 6.765$$

Approximation at $t_2 = 0.02$ is $p_2 = 6.765$

$$\frac{\pi d^2}{4} \Big/ 20$$