

DECA Chapter 1 Answer Key  
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1.  $\frac{dp}{dt} = 0.5p - 450$

(a) general solution

$$\frac{1}{p - 900} dp = \frac{1}{2} dt \quad (1)$$

$$\frac{d}{dt} (\ln |p - 900|) = dt \quad (2)$$

Integrate both sides to obtain

$$\ln |p - 900| = t + C \quad (3)$$

$$e^{t+C} = p - 900 \quad (4)$$

$e^{t+C}$  gives  $ke^t$

$$p = ke^{t/2} + 900 \quad (5)$$

(b)