

**36.19** What is the maximum theoretical efficiency of a power cycle operating with a minimum temperature of  $70^{\circ}F$  and a maximum temperature of  $900^{\circ}F$ ?

- A. 39%
- B. 61%
- C. 64%
- D. 92%

The maximum efficiency possible is based on the **Carnot Cycle** and depends entirely upon the temperatures of the hot and cold reservoirs which heat is being transferred from and to. Be sure to use absolute temperatures when applying the efficiency formula for a Carnot cycle.

$$\eta_c = \frac{(T_H - T_L)}{T_H} = \frac{1360^{\circ}R - 530^{\circ}R}{1360^{\circ}R} = 61\%$$

**Answer B**