

PHYSICS 1B TEST SIX

PLEASE EXPLAIN LOTS !!!!!!!!!!!!!!!!!!!!!!!

1. SNOW POWER

You want to run an engine using the temperature difference between your room, 24 C, and the snow outside, -24 C. What is the maximum percent efficiency?

$$2 \times 24 / (273 + 24) \times 100$$

- A. 4.78, B. (16.2), C. 23.6, D. 52.7, E. 70.8

2. GAS 'N ENTROPY

An ideal gas undergoes an isothermal expansion increasing volume from 13 to 58 L. The entropy change of the gas is 84 J/mole K. How many moles of gas are present?  $R = 8.31 \text{ J/mole K}$

$$84 / 8.31 / \log(58/13)$$

- A. 3.03, B. (6.76), C. 48.7, D. 287, E. 480

3. SIMPLE CYCLE

A cycle consists of an isotherm ( $T = 410 \text{ K}$ ) going from a volume of 6.3 liters to a volume 11 times as large. An isometric side increases the pressure. Finally an adiabatic side returns to the initial conditions. Find the percent efficiency.  $C_{\text{sub}} = 2 \text{ cal/mole degree K}$ .

$$100 - 250 \times (1 - 11^{-1.4}) / \log(11)$$

- A. 16, B. (35.7), C. 41.1, D. 101, E. 143

4. SECOND LAW: FORMS

State and discuss as many forms of the Second Law as you can show how they are equivalent.

shall I go on? [YES]

shall I print the tests on the:

Terminal (T), Line printer (L), Both (B), or Neither (N)? T

shall I print the key on the:

Terminal (T), Line printer (L), Both (B), or Neither (N)? T

Touch RETURN to continue.

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ANSWER	!	!	!	!	*	!	
QUESTION	!	1	!	2	!	3	!
	!		!		!	4	!

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