

Read 11.1 - 11.2

Makeup Exam

Wednesday 7:00 p.m. HERE

Material from Exams 1, 2, 3

3 Equation sheets

Replaces lowest Exam score

H.W Due Monday

Review

Ideal gas Law

$$PV = NKT$$

P: pressure

V: volume

T: Temperature (Kelvin)

N: Number of molecules of gas

K: $1.381 \times 10^{-23} \text{ J/K}$ (Boltzmann's Constant)

$$0^{\circ}\text{C} = 273 \text{ K}$$

$$100^{\circ}\text{C} = 373 \text{ K}$$

add 273

ΔT

$$= 100^{\circ}\text{C}$$

$$100 \text{ K}$$

same

Interactive Question

The Kelvin temperature of an ideal gas is doubled and the volume is halved. How is the pressure affected?

- A) increases by a factor of 2
- B) increases by a factor of 4
- C) stays the same
- D) decreases by a factor of 2
- E) decreases by a factor of 4

Interactive Question

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You fill your backpack with snacks and drive to the mountains to ski. When you get to the top of the mountain you notice that your bag of chips

- A) looks just like it did when you packed it at home.
- B) has shrunk and all of your chips are crushed.
- C) has puffed up and looks like it could pop.

Interactive Question

E

The temperature of an ideal gas increases from 100°C to 500°C . What happens to the internal energy.

- A) It decreases by $1/5$
- B) It increases by a factor of 5
- C) It increases by a factor of 25
- D) It stays the same
- E) It just about doubles

Interactive Question

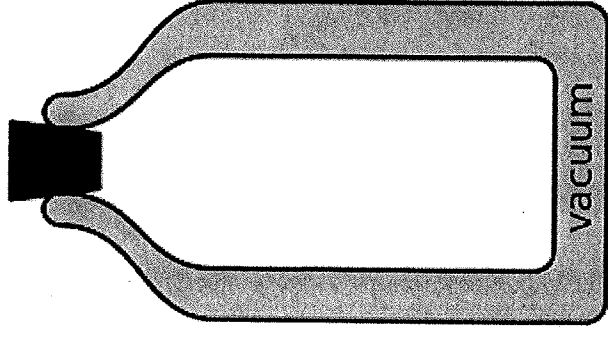
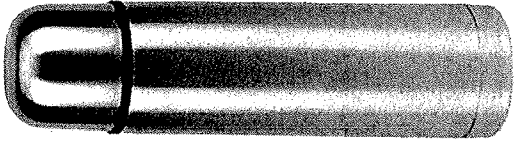
When you get out of bed on a cold winter morning, a tile floor will feel colder than a carpeted floor. This is because:

- A) A given mass of tile contains more heat than the same mass of carpet.
- B) Tile conducts heat better than carpet.
- C) Heat tends to flow from tile to carpet.
- D) The temperature of the tile is lower than the temperature of the carpet.
- E) The human body, being organic, resembles carpet more closely than it resembles tile.

Interactive Question

A thermos bottle works well because

- A) Its glass walls are thin
- B) Silvering reduces convection
- C) Vacuum reduces heat radiation
- D) Silver coating is a poor heat conductor
- E) None of the above



E

A

Interactive Question

The heat transfer process in which heat flows directly through the material is

- A) conduction
- B) convection
- C) radiation