PHYS 2C

Discussion Section – 2/05

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Before we Begin:

- Try and **sit next to a student you don't know**
- Introduce yourselves and find out where the other student is from

Today: Lightning Review and 2 Problems

Discussion Problem 1

Calorimetry

By how much will the temperature of a cup (180 g) of coffee at 95 °C be reduced when a 45 g silver spoon (specific heat 0.24 J/g °C) at 25 °C is placed in the coffee and the two are allowed to reach the same temperature?
Assume that the coffee has the same density and specific heat as water (4.184 J/g °C).

Discussion Problem 1 - Solution

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1 °C

Discussion Problem 2

Linear Temperature Scales

On a linear X temperature scale, water freezes at -124 °X and boils at 335 °X . On a Linear Y temperature scale, water freezes at -67.00 °Y and boils at -20.00 °Y.
A temperature of 51.00 °Y corresponds to what temperature on the X scale?

Discussion Problem 2 - Solution

Linear Temperature Scales

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1028.4 °X

Discussion Problem 3

Ideal Gas

Oxygen gas having a volume of $1180 cm^3$ at 42.2°C and 1.02×10^5Pa.

Find:

a) The number of moles of Oxygen present
b) The final temperature of the sample

Discussion Problem 3 - Solution

Ideal Gas

Oxygen gas having a volume of $1180 cm^3$ at 42.2°C and 1.02×10^5Pa.

Find:

a) The number of moles of Oxygen present

0.046 mol

b) The final temperature of the sample

524.25 K