PHYS 212 Temperature Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-

1. What is a thermoscope?
2. State the zeroth law of thermodynamics.
3. Explain the triple point of a substance.
4. Thermometers use thermometric properties that change with temperature. (a) What is the thermometric property in a constant volume gas thermometer? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
(b) What is the thermometric property of a thermocouple? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Show/Proof that the temperature conversion between Fahrenheit and Celsius scales is given by:

$$T\_{f}=\frac{9}{5}T\_{c}+32$$

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1. At what temperature is the Fahrenheit scale reading equal to that of the Celsius scale?
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1. Suppose that on a linear temperature scale X, water boils at -53.5°X and freezes at -170°X. What is a temperature of 340 K on the X scale? (Approximate water's boiling point as 373 K.)