13. A DEGREE PROBLEM

Whenever I have the need to convert from Fahrenheit to Celsius or vice versa, I can never remember the formulas. So instead, I do remember how to derive them quickly by just knowing two points on their graph, namely, the freezing and boiling points on each scale. Can you show how to derive them in this way and then take the one you derived and arrive at the other formula? Also, can you then calculate where the two lines would intersect and the significance of this point?