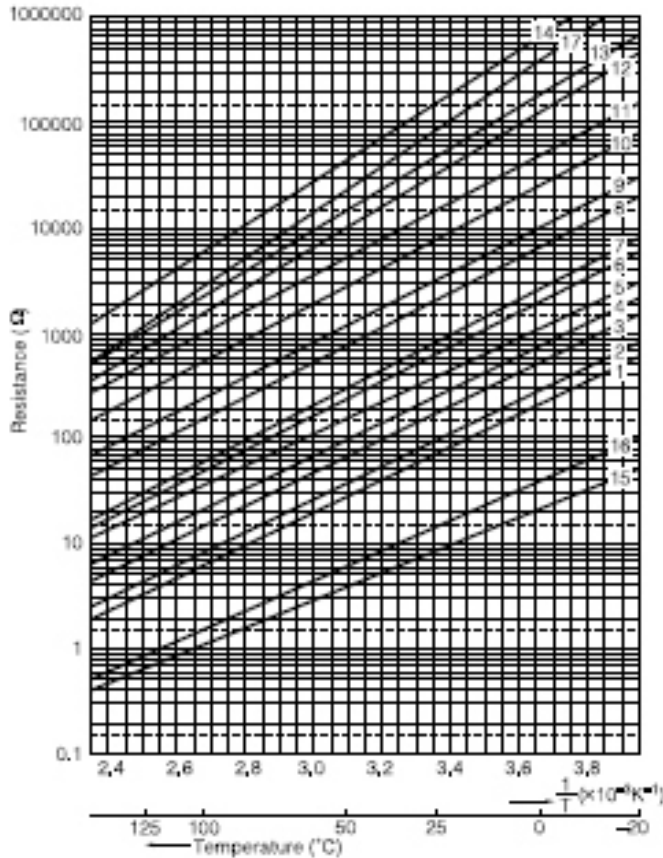


■ Resistance vs. Temperature (Table A)



A thermistor is an electronic component that exhibits a large change in resistance with a change in its body temperature. The calibration graph for various thermistors is shown to the left.

1. As the thermistors temperature increases, does the resistance of the sensor increase or decrease?

2. From the data sheet for the thermistor ... “Another major advantage offered by thermistors is the availability of a wide range of relatively high resistance values. By using high resistance thermistors, the effects of sensor lead resistance can be minimized.” Explain why this might be important.

3. Design a voltage divider circuit for the thermistor so that V_{out} increases as the thermistor temperature increases. Circuit should be designed for temperatures between -20 to 40 degrees Celsius. Explain how component values were selected. Explain how your circuit works.