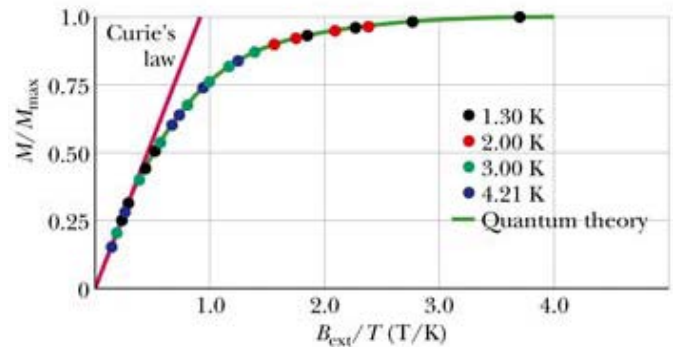


Ch. 24 Worksheet

1. In New Hampshire the average horizontal component of Earth's magnetic field in 1912 was $16 \mu\text{T}$, and the average inclination of "dip" was 73° . What was the corresponding magnitude of Earth's magnetic field?

2. A sample of paramagnetic salt to which the magnetization curve to the left applies is to be tested to see whether it obeys Curie's law. The sample is placed in a uniform 0.50 T magnetic field that remains constant throughout the experiment. The magnetization M is then measured at temperatures ranging from 10 to 300 K . Will it be found that Curie's law is valid under these conditions?



3. What inductance must be connected to a 17pF capacitor in an oscillator capable of generating 550 nm electromagnetic waves?
4. In a plane radio wave the maximum value of the electric field component is 5.00 V/m. Calculate the maximum value of the magnetic field component and the wave intensity.
5. At the beach the light is generally partially polarized due to reflections off sand and water. At a particular beach on a particular day near sundown, the horizontal component of the electric field vector is 2.3 times that of the vertical. A standing sunbather puts on polarizing sunglasses; the glasses eliminate the horizontal component. (a) What fraction of the light intensity received before the glasses were put on now reaches the sunbather's eyes? (b) If the sunbath lies on his side, what fraction now reaches his eyes?