1. The temperature in Browning, Montana, was 43.8 degrees F on January 23, 1916, and the next day it plummeted to -55.8 degrees F. What was the temperature change in Celsius degrees and in kelvins?
2. The melting point of gold is 1064°C, and the boiling point is 2660°C. (a) Express these temperatures in kelvins. (b) Compute the difference of the two temperatures in Celsius degrees and in kelvins.
3. The New River Gorge bridge in West Virginia is a 518-m long steel arch. How much will its length change between temperature extremes of -20°C and 35°C?
4. A cylindrical brass sleeve is to be shrink-fitted over a brass shaft whose diameter is 3.212 cm at 0°C. The diameter of the sleeve is 3.196 cm at 0°C.

(a) To what temperature must the sleeve be heated before it will slip over the shaft?

(b) Alternatively, to what temperature must the shaft be cooled before it will slip into the sleeve?
5. (a) An ideal gas occupies a volume of 1.0 cm$^3$ at 20°C and atmospheric pressure. Determine the number of molecules of gas in the container. (b) If the pressure of the 1.0 cm$^3$ volume is reduced to 1.0x10$^{-11}$ Pa (an extremely good vacuum) while the temperature remains constant, how many moles of gas remain in the container?
6. A cylinder with a movable piston contains gas at a temperature of 27.0°C, a volume of 1.50 m³, and an absolute pressure of 0.200 \times 10^5\text{Pa}. What will be its final temperature if the gas is compressed to 0.700 m³ and the absolute pressure increases to 0.800 \times 10^5\text{ Pa}?