

14 Temperature scales – Part 2 — Answers

Answers

Work through these after trying the questions yourself.

14.1 One whose value changes in a repeatable way with temperature.

14.2 Length of a liquid column, resistance of a metal, or thermocouple e.m.f. (any one).

14.3 The kelvin (K).

14.4 $T = 27 + 273 = 300$ K.

14.5 $\theta = 350 - 273 = 77$ °C.

14.6 About -273 °C.

14.7 It rises by 20 K. A *difference* in temperature is the same on both scales, because the scales are shifted by a fixed 273 but have the same size of degree.

14.8 On the kelvin scale, zero is absolute zero, so temperature is never negative and quantities like pressure and volume are directly proportional to T . On the Celsius scale, 0 is just the melting point of ice, so the gas laws would need awkward extra constants.