

15 The ideal gas equation – Part 2

—Answers

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Work through these after trying the questions yourself.

15.1 $pV = nRT$.

15.2 The number of moles.

15.3 Kelvin (K).

15.4 $p = \frac{nRT}{V} = \frac{1.5 \times 8.31 \times 400}{0.020} \approx 2.5 \times 10^5 \text{ Pa}.$

15.5 The thermodynamic temperature (in kelvin).

15.6 At constant pressure $V \propto T$ (in kelvin). T doubles, so the volume doubles.

15.7 T must be in kelvin, not Celsius. The correct value is $T = 27 + 273 = 300 \text{ K}.$