

1.4: Chapter 1 Problem

1.1

Consider the following equations for the pressure of a real gas. For each equation, find the dimensions of the constants a and b and express these dimensions in SI units.

(a) The Dieterici equation:

$$p = \frac{RTe^{-(an/VRT)}}{(V/n) - b} \quad (1.4.1)$$

(b) The Redlich–Kwong equation:

$$p = \frac{RT}{(V/n) - b} - \frac{an^2}{T^{1/2}V(V + nb)} \quad (1.4.2)$$

This page titled [1.4: Chapter 1 Problem](#) is shared under a [CC BY 4.0](#) license and was authored, remixed, and/or curated by [Howard DeVoe](#) via [source content](#) that was edited to the style and standards of the LibreTexts platform.

- [1.4: Chapter 1 Problem](#) by Howard DeVoe is licensed [CC BY 4.0](#). Original source: <https://www2.chem.umd.edu/thermobook>.