**Van der Waals equation of state (11 points)**

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| **Part** | **Answer** | **Marks** |
| **Part A. Non-ideal gas equation of state (2 points)** |
| A1.0.3pts | $$b=$$ |  |
| A2.1.3 pts | $$a=$$$$b=$$ |  |
| A3.0.2 pts | $$a\_{w}=$$$$b\_{w}=$$ |  |
| A4.0.2 pts | $$d\_{w}=$$ |  |
| **Part B. Properties of gas and liquid (6 points)** |
| B1.0.8 pts | $$V\_{G}≈$$ |  |
| B2.0.3 pts | $$\left(\frac{∆V\_{G}}{V\_{G0}}\right)=\frac{V\_{G0}-V\_{G}}{V\_{G0}}$$ |  |
| B3.0.7 pts | $$\frac{V\_{G}}{V\_{Gmin}}$$ |  |
| B4.1.0 pts | $$V\_{L}$$ |  |
| B5.0.3 pts | $$ρ\_{L}=$$ |  |
| B6.0.6 pts | $$α=\frac{1}{V\_{L}}\frac{∆V\_{L}}{∆T}=$$ |  |
| B7.1.1 pts | $$L=$$ |  |
| B8.1.2 pts | $$σ=$$ |  |
| **Part C. Liquid-gas system (3 points)** |
| C1.1.3 pts | $$∆p\_{T}$$ |  |
| C2.1.7 pts | The minimum radius of droplets that can grow$$r=$$ |  |