

Gas Law Equation Overview (#1)

BOYLE'S LAW $P_1V_1 = P_2V_2$

- 1) List five possible units for pressure.
 - 2) List three possible units for volume. (There are many!)
 - 3) Are pressure and volume directly ($P \propto V$) or indirectly ($P \propto 1/V$) proportional? Explain.
 - 4) Rearrange the equation to solve for P_1 .
 - 5) Rearrange the equation to solve for P_2 .
 - 6) Rearrange the equation to solve for V_1 .
 - 7) Rearrange the equation to solve for V_2 .
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CHARLES' LAW $\frac{V_1}{T_1} = \frac{V_2}{T_2}$

- 8) What unit must be used for T in all gas law problems?
 - 9) Are volume and temperature directly ($V \propto T$) or indirectly ($V \propto 1/T$) proportional? Explain.
 - 10) Rearrange the equation to solve for V_1 .
 - 11) Rearrange the equation to solve for T_1 .
 - 12) Rearrange the equation to solve for V_2 .
 - 13) Rearrange the equation to solve for T_2 .
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GAY-LUSSAC'S LAW $\frac{P_1}{T_1} = \frac{P_2}{T_2}$

- 14) Are pressure and temperature directly ($P \propto T$) or indirectly ($P \propto 1/T$) proportional? Explain.
 - 15) Rearrange the equation to solve for P_1 .
 - 16) Rearrange the equation to solve for T_1 .
 - 17) Rearrange the equation to solve for P_2 .
 - 18) Rearrange the equation to solve for T_2 .
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IDEAL GAS LAW $PV = nRT$

- 19) What is n?
 - 20) In a problem, how do you know which value for R to use?
 - 21) Rearrange the equation to solve for P.
 - 22) Rearrange the equation to solve for V.
 - 23) Rearrange the equation to solve for n.
 - 24) Rearrange the equation to solve for T.
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COMBINED GAS LAW $\frac{P_1V_1}{T_1} = \frac{P_2V_2}{T_2}$

- 25) Rearrange the equation to solve for P_1 .
- 26) Rearrange the equation to solve for V_1 .
- 27) Rearrange the equation to solve for T_1 .
- 28) Rearrange the equation to solve for P_2 .
- 29) Rearrange the equation to solve for V_2 .
- 30) Rearrange the equation to solve for T_2 .