Formulas

Automotive Service Technician 2025 – Level 1

Note: This formula sheet is provided as a resource. The sheet may not include all necessary formulas and may contain formulas not required for this exam. Apprentices must apply the formulas to demonstrate their understanding.

Formulas

Number	Description	Full Formula	Abbreviated
1.	Current	$\frac{\text{voltage}}{\text{resistance}}$	$\frac{E}{R}$
2.	Displacement	π x radius^2 x stroke x number of cylinders	(πr^2 x s) x #cyl
3.	Displacement	bore^2 x stroke x 0.7854 x number of cylinders	b^2 x s x 0.7854 x #cyl
4.	Force	pressure x area	P x A
5.	Resistance	$\frac{\text{voltage}}{\text{current}}$	$\frac{E}{I}$
6.	Total Resistance	$\frac{1}{\frac{1}{\text{resistor}_1} + \frac{1}{\text{resistor}_2} + \frac{1}{\text{resistor}_3}}$	$\frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}}$
7.	Voltage	current x resistance	I x R