


This reference material will also be available to you during the exam. To access it, click on the

 icon located in the lower-left corner of the screen.

## TX PACT: SCIENCE: GRADES 4–8 CONSTANTS AND FORMULAS

Acceleration of gravity on Earth ( $g$ )	$9.8 \text{ m/s}^2$
Potential energy	$PE = mgh$
Kinetic energy	$KE = \frac{1}{2}mv^2$
Ohm's law	$V = IR$
Electrical power	$P = IV$
Series resistance	$R_{\text{Series}} = R_1 + R_2 + R_3 + \dots$
Parallel resistance	$\frac{1}{R_{\text{Parallel}}} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \dots$
Ideal gas law	$PV = nRT$
Universal gas constant	$R = 8.31 \text{ J/mol}\cdot\text{K} = 0.0821 \text{ L}\cdot\text{atm/mol}\cdot\text{K}$
Pressure	$P = \frac{\text{force}}{\text{area}}$
Frequency of a wave	$f = 1/T$
Velocity of a wave	$v = f\lambda$
Specific heat ( $s$ ) of water (liquid)	$4.18 \text{ J/g}\cdot\text{K} = 4.18 \text{ J/g}\cdot^\circ\text{C} = 1.0 \text{ cal/g}\cdot^\circ\text{C}$
Standard atmospheric pressure (STP)	$1 \text{ atm} = 760 \text{ mm Hg} = 760 \text{ torr} = 101.325 \text{ kPa}$
Speed of light in a vacuum ( $c$ )	$3.00 \times 10^8 \text{ m/s}$
1 calorie (cal)	4.184 J
1 watt (W)	1 J/s
1 ampere (A)	1 C/s