

# A-REI Ideal Gas Law

## Task

A certain number of Xenon gas molecules are placed in a container at room temperature. If  $V$  is the volume of the container and  $P(V)$  is the pressure exerted on the container by the Xenon molecules, a model predicts that

$$P(V) = \frac{40}{2V - 1} - \left(\frac{4}{V}\right)^2$$

for all  $V > \frac{1}{2}$ . Here the units for volume are liters and the units for pressure are atmospheres.

- Sketch a graph of  $P$ .
- Using the graph, approximate the volume for which the pressure is 10 atmospheres.



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