



Name:

02/16/09

### Assignment #8: More on Gas Laws

1. A sample of Gas originally has a volume of  $1 \text{ m}^3$ . It has an initial temperature of  $300\text{K}$ . Find the volume of the sample at each of the following temperatures (assuming pressure remains constant):

a.  $100\text{K}$

e.  $900 \text{ K}$

b.  $200 \text{ K}$

f.  $373\text{K}$

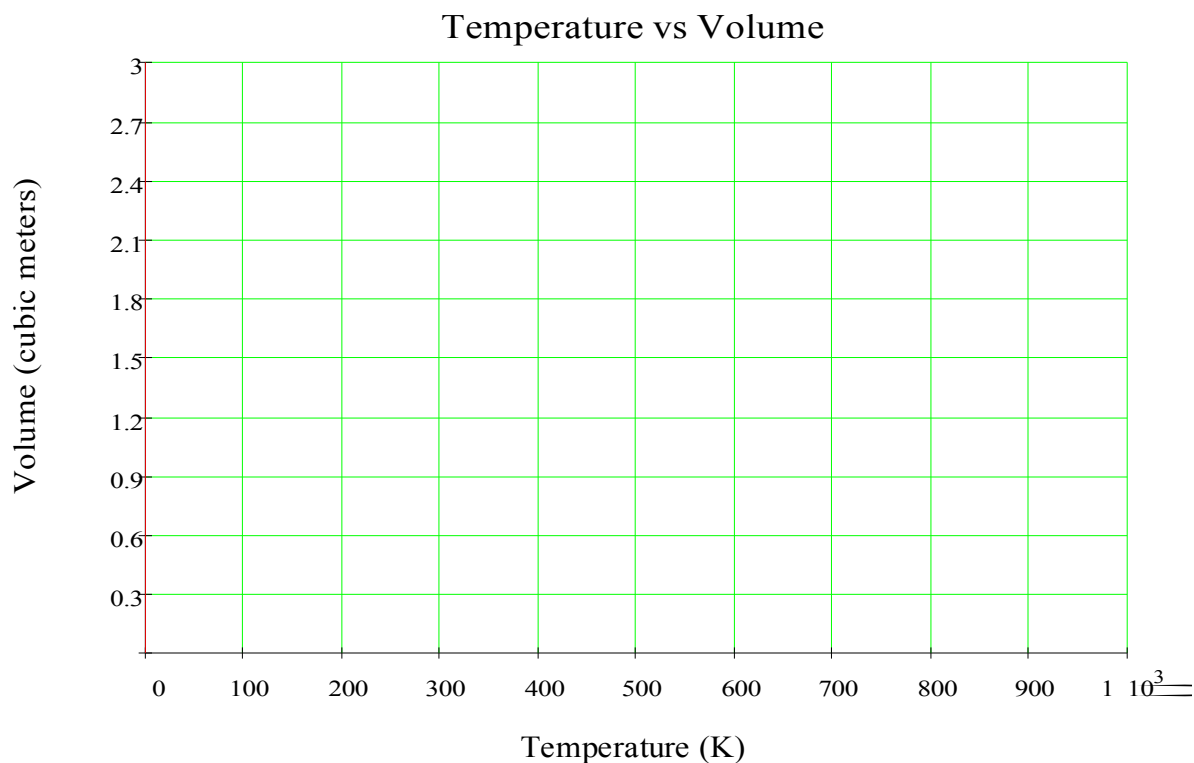
c.  $400 \text{ K}$

g.  $25 \text{ K}$

d.  $500 \text{ K}$

h.  $675 \text{ K}$

2. Plot each of the volumes and temperatures on the following graph.



3. Using the graph, what would you predict the volume to be when the temperature is  $150\text{K}$ ?



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4. A sample of gas originally has a pressure of 100,000 Pa. Its volume is 2 m<sup>3</sup>. What is the volume of the gas at each of the following pressures (assuming temperature remains constant)?

a. 150,000 pa

f. 30,000 pa

b. 200,000 pa

g. 40,000 pa

c. 250,000 pa

h. 75,000 pa

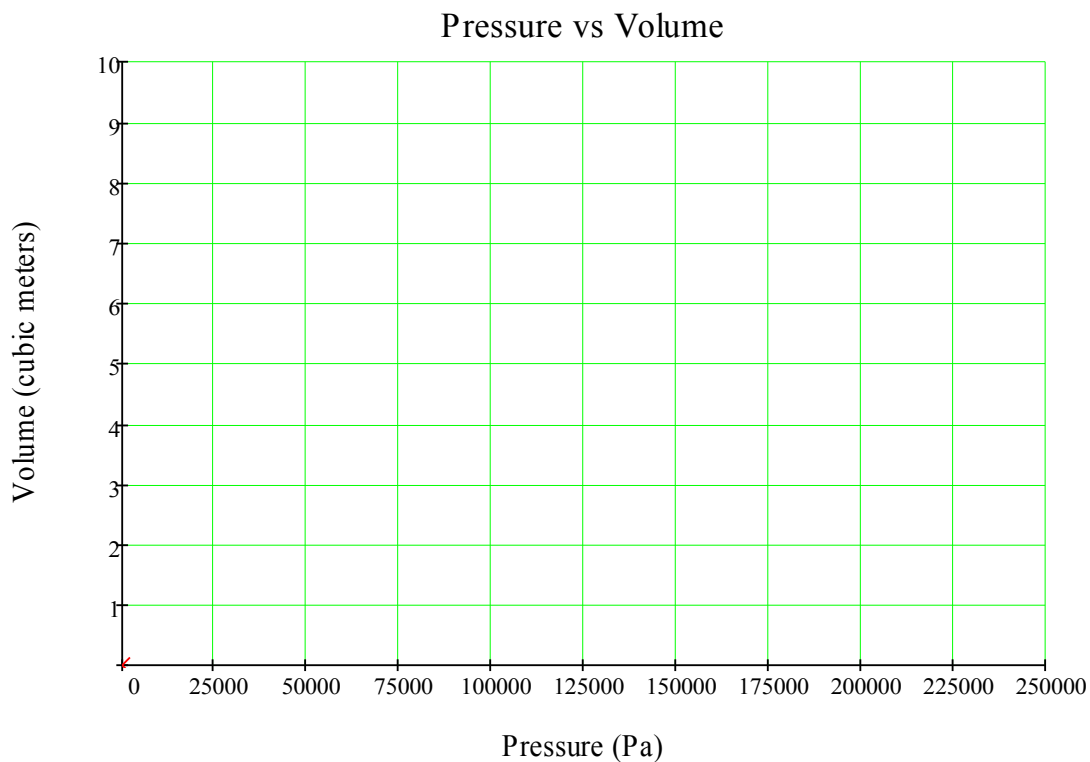
d. 50,000 pa

i. 25,000 pa

e. 20,000 pa

j. 125,000 pa

5. Plot each of the pressure / volume coordinates on the graph below:



6. Based on the graph, what would the most likely volume for 225,000 pa be?