

## Quiz 9.3 – Gas Kinetics

Name: \_\_\_\_\_

**Problem 1**

The temperature in Cedar city can range over the year from  $-10\text{ }^{\circ}\text{C}$  and  $35\text{ }^{\circ}\text{C}$

Find the  $v_{rms}$  for nitrogen gas at  $-10\text{ }^{\circ}\text{C}$  and  $35\text{ }^{\circ}\text{C}$

**Problem 2**

Two identical balloons are each filled with gas to equal volumes. One balloon contains He and the other contains O<sub>2</sub>. Identical pinholes are punched into both balloons at the same time, and it takes 73 s for the He balloon to deflate to half its initial volume. How long would you predict it will take the O<sub>2</sub> balloon to deflate to half its original volume?

**Problem 3**

The van Der Waals equation improves the ideal gas law by adding in two new parameters:  $a$  and  $b$

Briefly describe what physical properties each of these two parameters relates to:

$a$ :

$b$ :

*God Says Yes to Me*

By Kaylin Haught

I asked God if it was okay to be melodramatic  
and she said yes  
I asked her if it was okay to be short  
and she said it sure is  
I asked her if I could wear nail polish  
or not wear nail polish  
and she said honey  
she calls me that sometimes  
she said you can do just exactly  
what you want to  
Thanks God I said  
And is it even okay if I don't paragraph  
my letters  
Sweetcakes God said  
who knows where she picked that up  
what I'm telling you is  
Yes Yes Yes