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| Solid Phases  CλeMis+ry: http://genest.weebly.com  Stop in for help every day at lunch and Tues, Weds., &Thurs after school!  After-hours question? Email me at home: [eagenest@madison.k12.wi.us](mailto:eagenest@madison.k12.wi.us) |  | Name\_\_\_\_\_\_\_\_\_\_\_\_\_  Period\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. Write the standard temperature in \_\_\_\_\_\_\_\_ °C \_\_\_\_\_\_\_\_ kelvins
2. If chlorine gas is at its boiling point, then you double the kinetic energy. What will its new temperature be in Celsius? (See chart below).
3. Indicating atoms of sulfur by circles with an S inside, sketch two different allotropes of sulfur in the space below:

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| substance | melting point [°C]\* | boiling point [°C]\* |
| chlorine (Cl2) | -102 | -34 |
| bromine (Br2) | -7.2 | 59 |
| iodine (I2) | 114 | \*\* |
| water |  |  |

\*measured at standard pressure

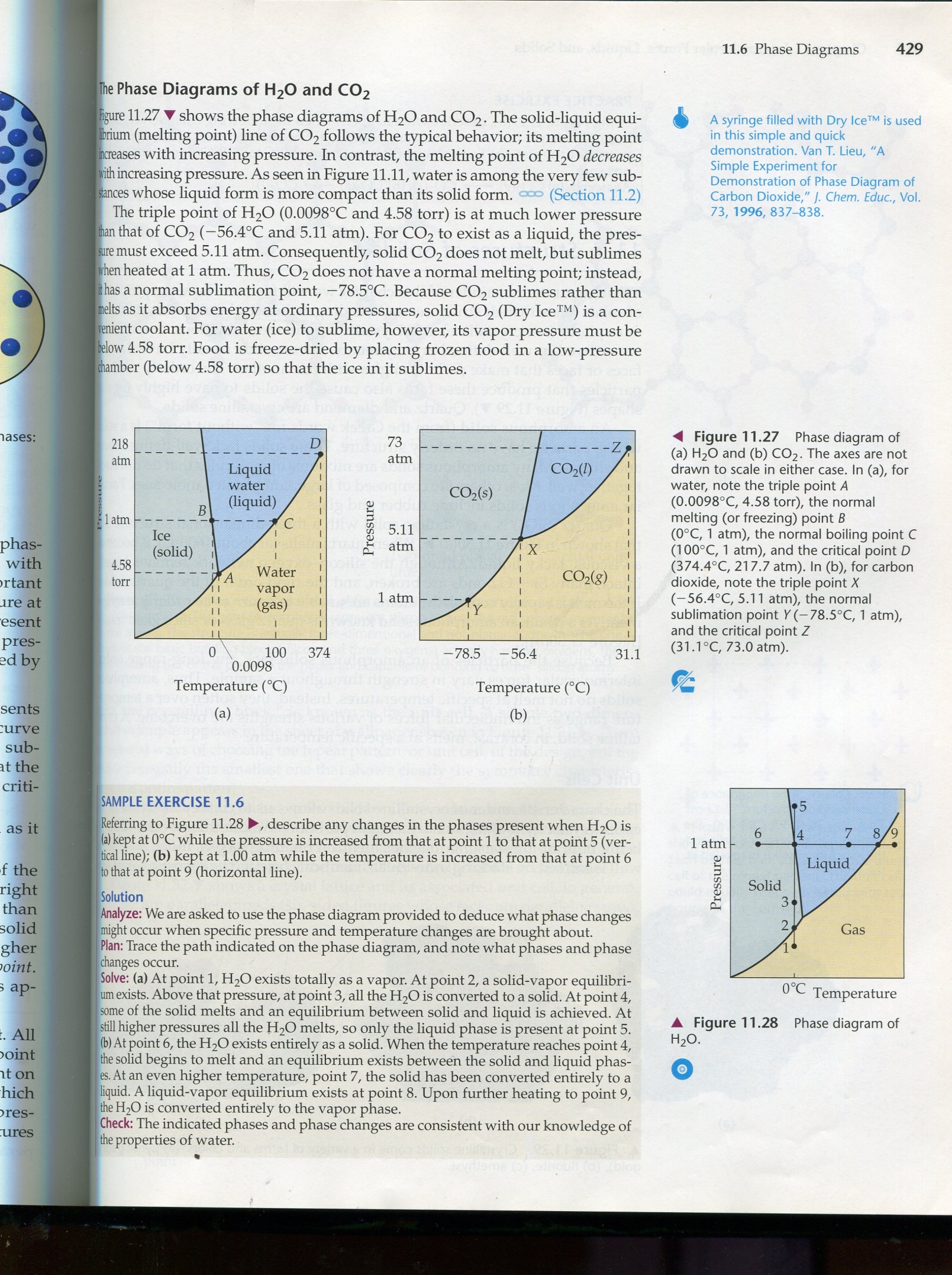
\*\*sublimes instead of vaporizing at standard pressure

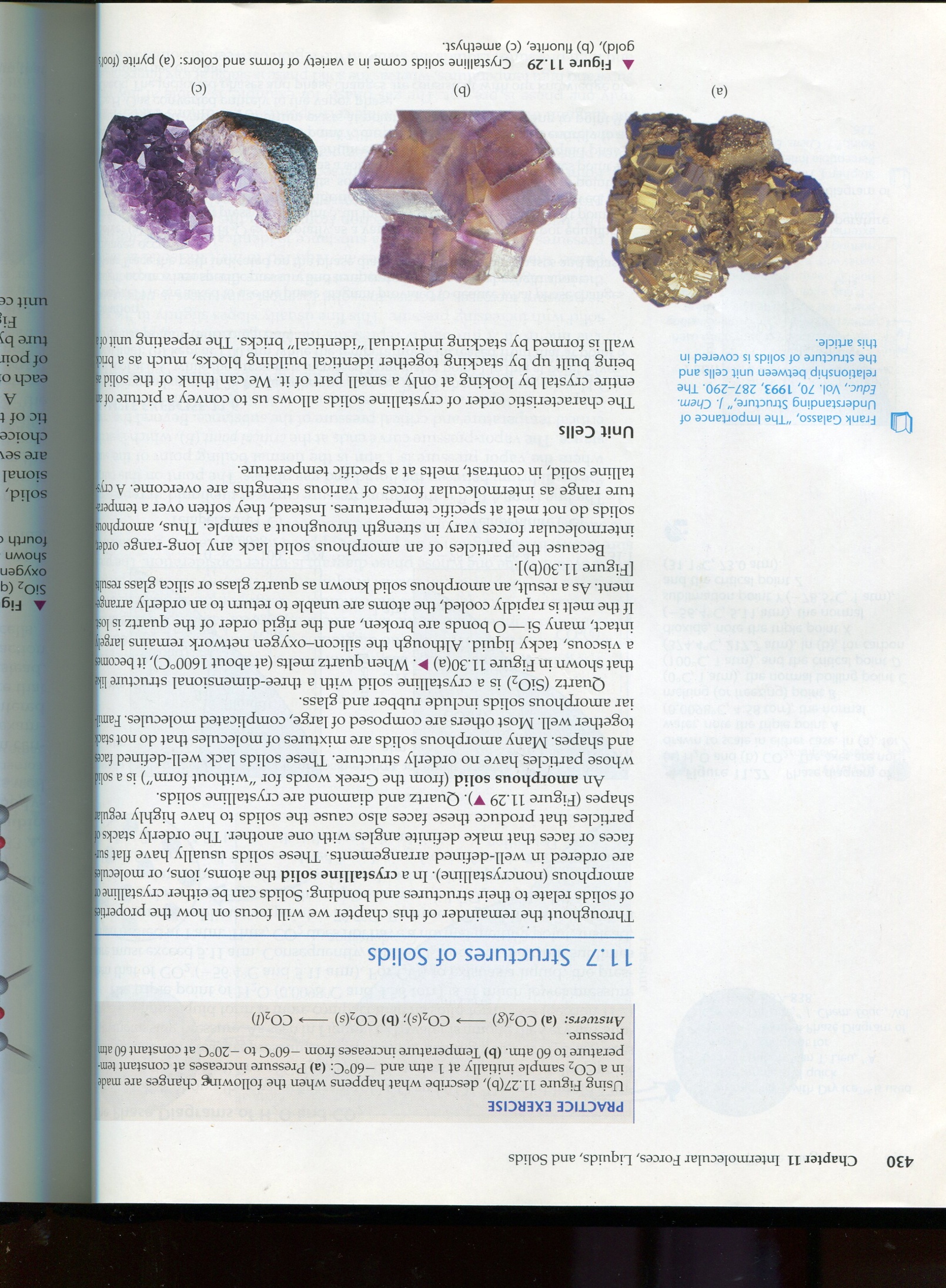
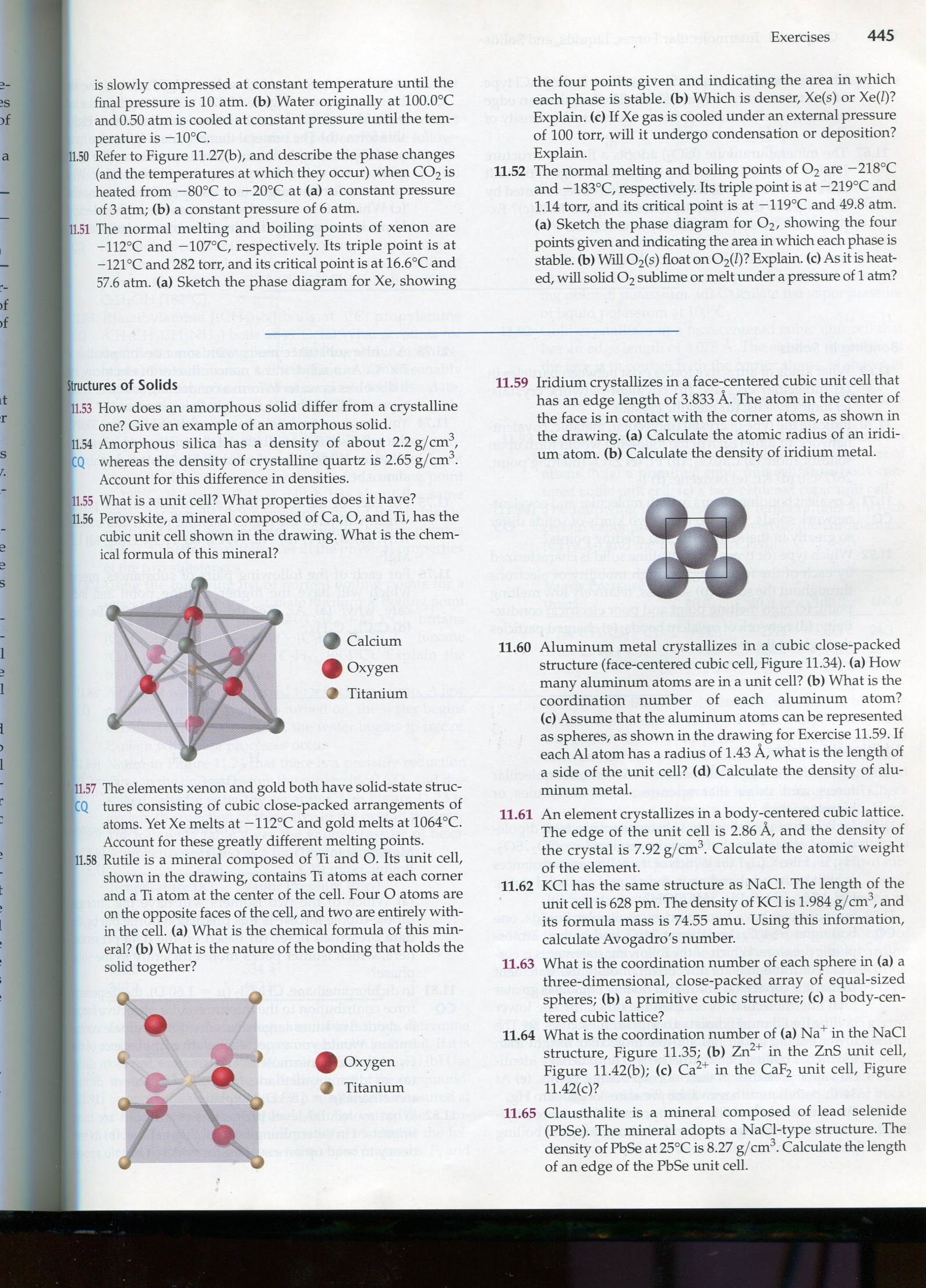
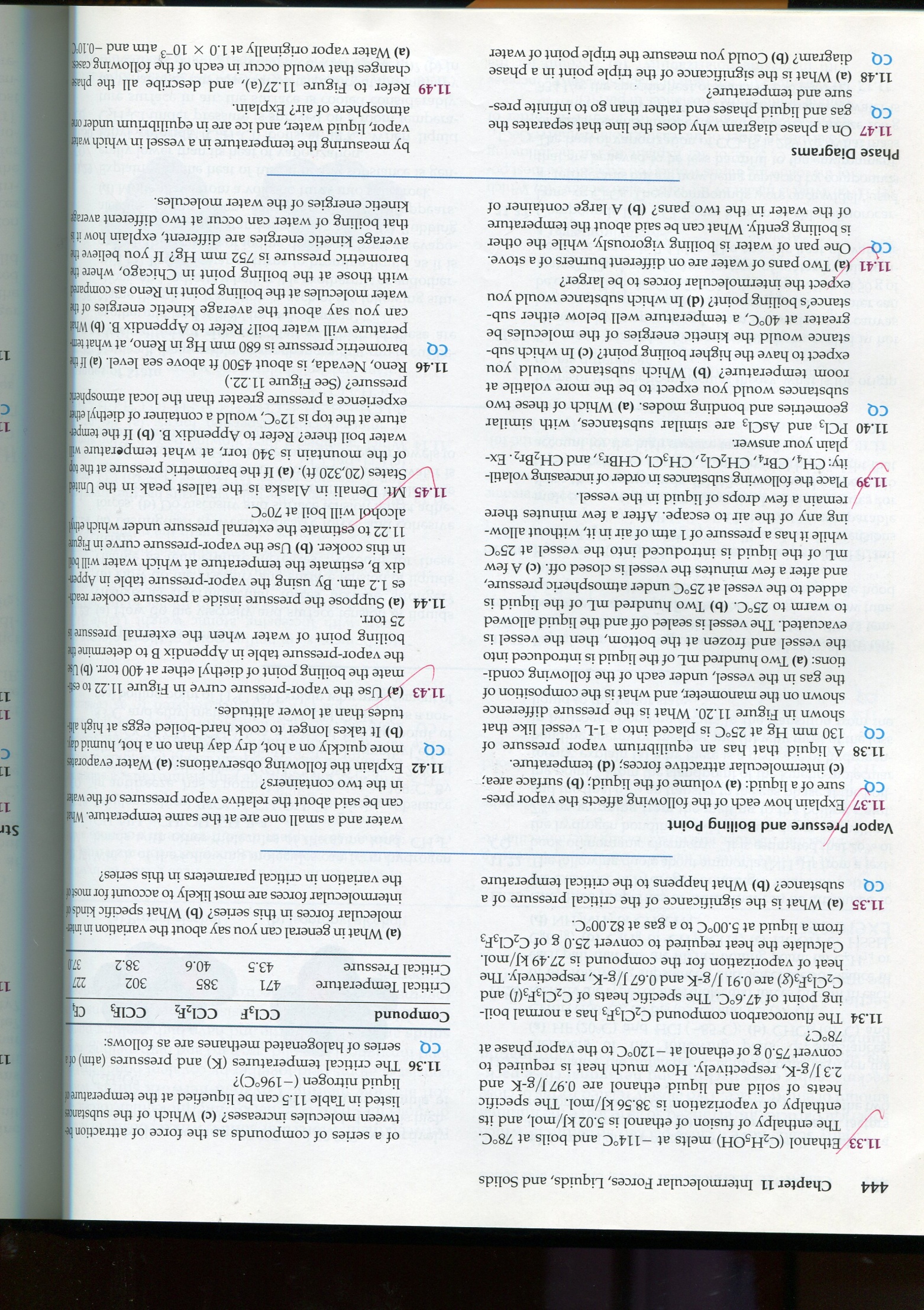
Use the table above to answer the following questions

1. Scientists working in Antarctica frequently encounter temperatures of 313 kelvins. At this temperature predict the phase of each substance:
   1. chlorine would be \_\_\_\_\_\_\_\_\_\_\_\_
   2. bromine would be \_\_\_\_\_\_\_\_\_\_\_\_
   3. iodine would be \_\_\_\_\_\_\_\_\_\_\_\_
2. Add a line in the table above for H2O. Fill in the numbers.
3. Calculate the melting point of bromine to kelvins: \_\_\_\_\_\_\_\_\_
4. In the square below, sketch a crude heating curve for heating bromine from -100°C to +100°C. Label your axes *time[minutes]* and *temperature[°C].*  Clearly write a number for the temperature of melting and boiling on the Y-axis

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1. Sketch an example of an amorphous substance, from class notes, using circles as atoms.



1. 
2. 

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| uranus164.jpg | uranus168.jpg |