Flatus: Chemistry in the Wind
by Claudia Vanderborght

1. Following Boyle's Law, as altitude increases atmospheric pressure _____ (increases, decreases) and the volume of gas in the human intestine (increases, decreases).

2. What diet restrictions did the Air Force impose for pilots? Why?

3. The average volume of gas for most people is 35-90mL per day. If an individual experiences excessive gas this could indicate various medical conditions. What medical conditions are mentioned in this article?

4. What gases are in human flatus? Give the names and formulas.

5. Only about one-third of folks produce methane. How does that affect the density of their stools?

6. What is the balanced chemical equation for the production of methane in the intestines? How many mL of Hydrogen gas would be needed to produce 50.0 mL of methane? (Assume constant temperature and pressure.)

7. How does methane compare to carbon dioxide in its ability to trap heat?

8. What are the names and formulas of the three gases that primarily cause odor in flatus?

9. For the three main gas relief products: lactaid, gas-x and beano, how do each of these work?

10. Assume an elevator is 2.0 metes wide, 1.5 meters deep, and 2.5 meters tall. If the density of air is 1.29 grams per liter, how many mL of hydrogen sulfide would be needed to produce an unpleasant concentration of 50ppm? (ppm is parts per million by mass or 1 mg per 1kg)