1. Due to improper ventilation of a gasoline-powered cement cutter, carbon monoxide levels in a warehouse reached 2,000 ppm. The warehouse is 150 x 100 feet, with 25 foot ceilings. A propeller fan is used to ventilate the building. The fan can generate a flow of 5000 cfm dilution air into the building. How long will it be until the building is safe to reenter? (What is the PEL for carbon monoxide?) What will the carbon monoxide concentration be in 3 hours 45 minutes?

2. A parts cleaning operation allows 5 pounds of toluene to evaporate each hour. Dilution air, from natural ventilation, is 150 cfm. What is the maximum concentration of toluene reached in this shop?

3. The concentration of styrene in a boat repair facility is 175 ppm. General ventilation into the repair bays is 4,500 cfm. How much additional air will be needed to reduce the styrene concentration to 75 ppm?

4. What is the air capture velocity generated at a distance of 9 inches from a 6 inch diameter round duct with a flow of 50 cfm? Calculate this for both flanged and unflanged hoods (the duct may be considered a hood).

5. A plating tank is 4 feet wide and 2 feet deep. What flow will be required in order to generate a capture velocity of 175 fpm at the front of the plating tank? Calculate the flow for an unflanged slot hood.