**12-4 Word Problem Practice**

***Volumes of Prisms and Cylinders***

**1. TRASH CANS** The Meyer family uses a kitchen

**** trash can shaped like a cylinder. It has a height of 18 inches and a base diameter of 12 inches. What is the volume of the trash can? Round your answer to the nearest tenth of a cubic inch.

**2. BENCH** Inside a lobby, there is a piece of furniture for sitting. The furniture is shaped like a simple block with a square base 6 feet on each side and a height of 1$\frac{3}{5}$ feet.



What is the volume of the seat?

**3. FRAMES** Margaret makes a square frame out of four

 pieces of wood. Each piece of wood is a rectangular prism with a length of 40 centimeters, a height of 4 centimeters, and a depth of 6 centimeters. What is the total volume of the wood used in the frame?

**4. PENCIL GRIPS** A pencil grip is shaped like a triangular prism with a cylinder removed from the middle. The base of the prism is a right isosceles triangle with leg lengths of 2 centimeters. The diameter of the base of the removed cylinder is
1 centimeter. The heights of the prism and the cylinder are the same, and equal to 4 centimeters.



What is the exact volume of the pencil grip?

**5. TUNNELS** Construction workers are digging a tunnel through a mountain. The space inside the tunnel is going to be shaped like a rectangular prism. The mouth of the tunnel will be a rectangle 20 feet high and 50 feet wide and the length of the tunnel will be 900 feet.

**a.** What will the volume of the tunnel be?

**b.** If instead of a rectangular shape, the tunnel had a semicircular shape with a 50-foot diameter, what would be its volume? Round your answer to the nearest cubic foot.