Name _____ Date _____
Mr. Schlansky Geometry

Unit Analysis

1. A block of wood has a volume of $200\,cm^3$. The cost of the wood is \$.10 per gram and the density of the wood is 2.1 g/cm^3. What would be the cost of producing 15 of these blocks of wood.

2. A cylindrical test tube has a volume of $45\,in^3$. The liquid inside has weighs 4 ounces per cubic inch and the cost of the liquid is \$.12 per ounce. How much will it cost to fill the test tube to 80% of its capacity?

3. The volume of a pool is 25,000 gallons. The cost of the water to fill the pool is \$120 per 8000 gallons. How much will it cost to fill the pool up 90%?

4. An object made of steel has a volume of $24.1cm^3$. The steel costs \$1.25 for 500 grams and has a density of $3.1g/cm^3$. How much will it cost to make 25 of these objects?

5. A stone brick has a volume of 150 in^3. The stone weighs 5 grams per cubic inch and it costs \$4.52 for 500 grams of stone. How much will it cost to purchase enough stone to make 12 bricks?

6. A machinist creates a solid steel part for a wind turbine engine. The part has a volume of 1015 cubic centimeters. Steel can be purchased for $0.29 per kilogram, and has a density of 7.95 g/cm^3. If the machinist makes 500 of these parts, what is the cost of the steel, to the *nearest dollar*?

7. A water tower has a volume of 1000 liters and the cost of the water is $250 per cubic kiloliter. How much will it cost to fill the water tower up to 60% of its capacity?

8. A wax candle has a volume of 885 cubic centimeters. The wax costs $1.24 per kilogram and has a density of $1.9\,g/cm^3$. How much will it cost to make 80 candles?

9. An object has a volume of 12 cubic inches and the material it is made from has a density of $7.6\ g/in^3$. If the cost of the material is $1.25 per kilogram, how much will it cost to make 50 of these objects?

10. An object has a volume of 1200 cubic feet. The material it is made of weighs 3.2 pounds per cubic foot and it costs $2.50 per ounce. If a company has to pay 75% of the cost, how much will the company have to pay for 15 of these objects?