SA and Volume Problems

Name_____

1) Jimmy has a stainless steel cylinder. It has a diameter of 14cm and a height of 1.2m. He wants to cover it with decals.

a. Is this a surface area or volume question?

b. Determine the Surface Area in cm^2

c. Determine the Surface Area in in^2

d. Each decal covers 8 square inches. How many decals does he need?

2) Jimmy is filling up his rectangular prism fish tank with water. The fish tank has a length of 2 ft, a width of 16 inches, and a height of 20 inches.

a. Is this a surface area or volume question?

b. Determine the volume in cubic inches.

c. Determine the volume in cubic feet.

d. He is using a cone to fill the tank. He fills the cone at the tap, then pours it into the tank. The cone has a radius of 8cm and a height of 16cm. Determine the volume of the cone in cm^3.

e. Determine the volume of the cone in in^3.

f. How many trips will he need to make to the tap with the cone to fill the tank entirely?

3) Jimmy is painting the walls of his room. The room is 14' long, 11'6" wide, and 9' high. There is a door that is 7' x 4' and a window that is 3' x 5' that he will not paint.

a. Is this a surface area of volume question?

b. Determine the surface area of the walls of his room in square feet, including the door and window.

c. Determine the surface area that he needs to paint.

d. Jimmy is painting with dollar store tubes that cover $10m^2$ of wall space. How many square feet does one tube cover?

e. Jimmy is going to do 2 coats of paint. How many tubes does he need?

Answers to SA and Volume Problems

1) a. SA
   b. 5585.75cm^2
   c. 865.8 in^2
   d. 109 decals

2) a. volume
   b. 7680 in^3
   c. 4.4 ft^3
   d. 1072cm^3
   e. 65.44in^3
   f. 118 trips

3) a. SA
   b. 459ft^2
   c. 416 ft^2
   d. 107.64ft^2
   e. 8 tubes