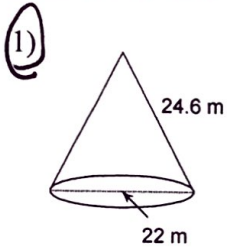


Surface Area Classwork

P.28

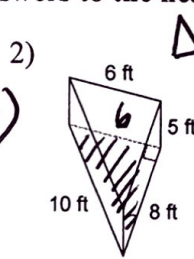
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Find the surface area of each figure. Round your answers to the nearest tenth, if necessary.



$$S = \pi(11)^2 + \pi(11)(24.6)$$

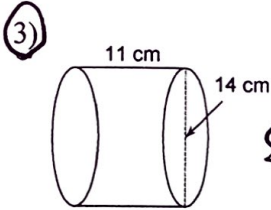
$$= \underline{1230.25 \text{ m}^2}$$



Δ prism $B = \frac{1}{2}(6)(8) = 24$
 $P = 8 + 6 + 10 = 24$

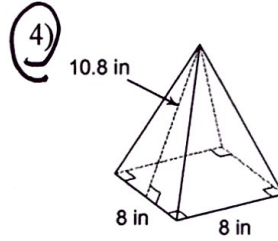
$$S = 24(2) + 24(5)$$

$$= \underline{168 \text{ ft}^2}$$



$$S = 2\pi(7)(7 + 11)$$

$$= \underline{791.7 \text{ cm}^2}$$

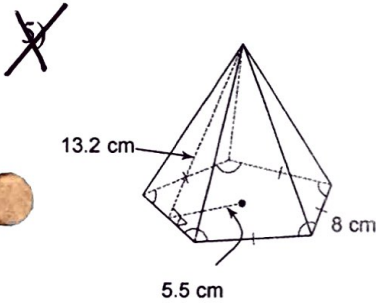


$$B = 8(8) = 64$$

$$P = 8(4) = 32$$

$$S = 64 + \frac{1}{2}(32)(10.8)$$

$$= \underline{236.8 \text{ in}^2}$$

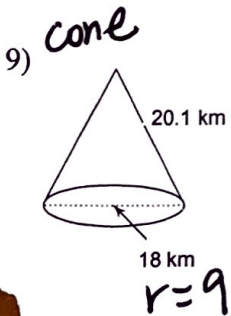
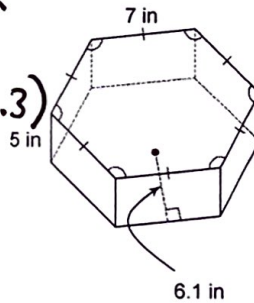
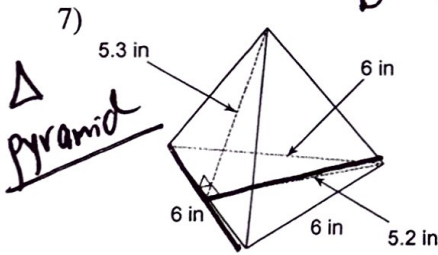
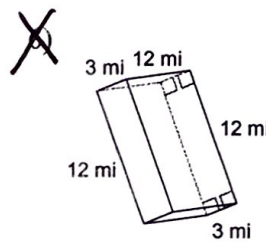


$$B = \frac{1}{2}(6)(5.2) = 15.6$$

$$P = 6 + 6 + 6 = 18$$

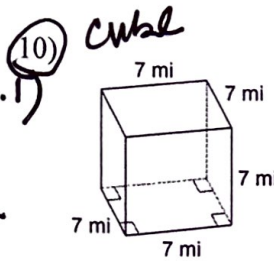
$$S = 15.6 + \frac{1}{2}(18)(5.3)$$

$$= \underline{63.3 \text{ in}^2}$$



$$S = \pi(9)^2 + \pi(9)(20.1)$$

$$= \underline{822.78 \text{ km}^2}$$



$$B = 7(7) = 49$$

$$P = 7(4) = 28$$

$$S = 2(49) + 28(7)$$

$$= \underline{294 \text{ mi}^2}$$

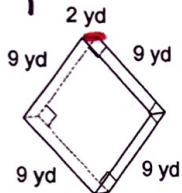
or $S = 6(7)^2 = 294$

Volume Class Work

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Find the volume of each figure. Round your answers to the nearest hundredth, if necessary.

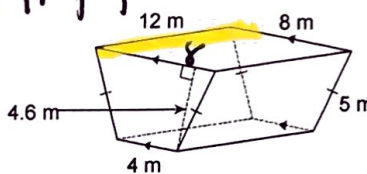
1) prism \Rightarrow square



$$B = 9(9) = 81$$

$$V = 81(2) = \underline{162 \text{ yd}^3}$$

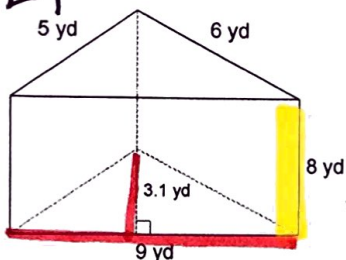
2) trap. prism



$$B = \frac{1}{2}(4.6)(8+12) = 27.6$$

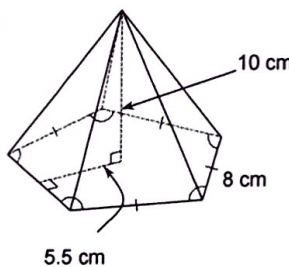
$$V = 27.6(12) = \underline{331.2 \text{ m}^3}$$

3) Δ prism

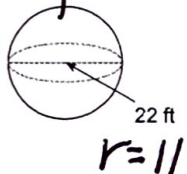


$$B = \frac{1}{2}(9)(3.1) = 13.95$$

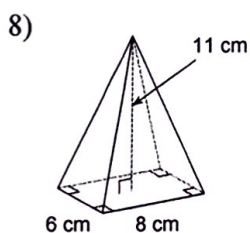
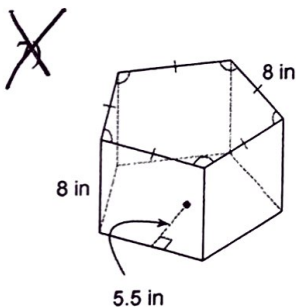
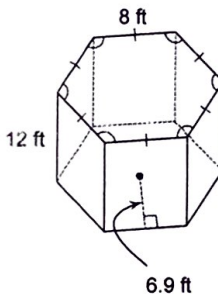
$$V = 13.95(8) = \underline{111.6 \text{ yd}^3}$$



5) sphere

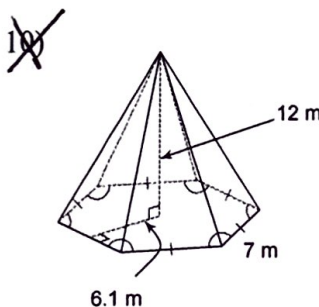
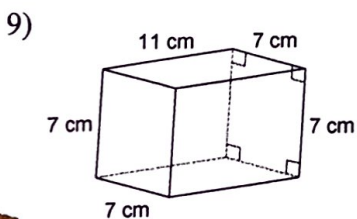


$$V = \frac{4\pi(11)^3}{3} = \underline{5575.28 \text{ ft}^3}$$



$$B = 6(8) = 48$$

$$V = \frac{48(11)}{3} = \underline{176 \text{ cm}^3}$$



$$\text{density} = \frac{\text{mass}}{\text{volume}}$$

$$\text{volume} = \frac{\text{mass}}{\text{density}}$$

$$\text{mass} = \text{density} \cdot \text{volume}$$

Density is the relationship of the mass of an object to its volume. Density is usually reported in grams per cubic centimeter (g/cm^3)

1. A piece of tin has a mass of 16.52 g and a volume of 2.26cm^3 . What is the density of tin?

$$d = \frac{16.52}{2.26} = 7.31 \text{ g/cm}^3$$

2. A man has a 50.0cm^3 bottle completely filled with 163 g of a slimy green liquid. What is the density of the slimy green liquid?

$$d = \frac{163}{50} = 3.26 \text{ g/cm}^3$$

3. A sealed 2500cm^3 flask is full to capacity with 0.36 g of a substance. Determine the density of the substance.

4. The density of oak wood is generally 0.7 g/cm^3 . What is the mass of a 35cm^3 piece of oak?

$$35 \cdot 0.7 = \frac{m}{35} \cdot 35 \rightarrow m = 24.5 \text{ g}$$

5. The density of pine is generally about 0.5 g/cm^3 . What is the mass of a 800cm^3 piece of pine?

6. What is the volume of 325 g of metal with a density of 9.0 g/cm^3 ?

$$d = \frac{m}{V} \quad V \cdot 9 = \frac{325}{9} \cdot V$$

$$\frac{9V}{9} = \frac{325}{9} \quad V = 36.11 \text{ cm}^3$$

$density = \frac{mass}{volume}$
 $volume = \frac{mass}{density}$
 $mass = density \cdot volume$

Density is the relationship of the mass of an object to its volume. Density is usually reported in grams per cubic centimeter (g/cm^3)

1. A piece of tin has a mass of 16.52 g and a volume of 2.26 cm^3 . What is the density of tin?

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$$d = \frac{163}{50} = \underline{3.26\text{ g/cm}^3}$$

3. A sealed 2500 cm^3 flask is full to capacity with 0.36 g of a substance. Determine the density of the substance.

$$d = \frac{0.36}{2500} = \underline{.000144\text{ g/cm}^3} = \underline{1.44 \times 10^{-4}}$$

0.000144

4. The density of oak wood is generally 0.7 g/cm^3 . What is the mass of a 35 cm^3 piece of oak?

$$m = 0.7(35) = \underline{24.5\text{ g}}$$

5. The density of pine is generally about 0.5 g/cm^3 . What is the mass of a 800 cm^3 piece of pine?

$$m = 0.5(800) = \underline{400\text{ g}}$$

6. What is the volume of 325 g of metal with a density of 9.0 g/cm^3 ?

$$V = \frac{325}{9} = \underline{36.11\text{ cm}^3}$$

7. Diamonds have a density of 3.5 g/cm^3 . How big is a diamond that has a mass of 0.10 grams?

$$V = \frac{0.10}{3.5} = \underline{0.0286 \text{ cm}^3}$$

8. What mass of water in grams will fill a tank 100 cm long, 50 cm side, and 30 cm high?
(Hint: find the volume first!)

$$V = 100 \cdot 50 \cdot 30 = 150000 \text{ cm}^3$$

$$M = 1 \cdot 150000 = \underline{150000 \text{ g}}$$

$D = 1$
water

9. You have a lead ball with a mass of 420 g. The density of lead is 10.5 g/cm^3 . What is the volume of the ball?

$$V = \frac{420}{10.5} = \underline{40 \text{ g/cm}^3}$$

10. A student has a rectangular block. It is 2 cm wide, 3 cm tall, and 25 cm long. It has a mass of 600 g.
(Hint: find the volume first!)

$$V = 2 \cdot 3 \cdot 25 = 150 \text{ cm}^3$$

$$D = \frac{600 \text{ g}}{150} = \underline{4 \text{ g/cm}^3}$$

11. A loaf of bread has a mass of 500 g and volume of 2500 cm^3 . What is the density of the bread?

$$D = \frac{500}{2500} = \underline{0.2 \text{ g/cm}^3}$$