

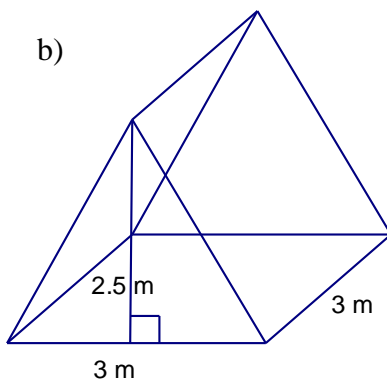
Course: MFM2P Gr. 10 AppliedLesson: 8 - 3Unit: Volume and Surface AreaTopic: Surface Area of Prisms and Pyramids

✚ *homework check:* Lesson 8 - 2✚ *note:* Surface Area of Prisms and Pyramids

The surface area of an object is the amount of material needed to make the three dimensional representation of the shape. Surface area is measured in square units. To find the surface area of any three dimensional object, we can find the individual area of each face and add them together to get the total. For example, find the surface of each of the following.



$$\begin{aligned}SA &= 2lw + 2lh + 2wh \\&= 2(11)(7) + 2(11)(4) + 2(7)(4) \\&= 154 + 88 + 56 \\&= 298\text{mm}^2\end{aligned}$$



$$c^2 = a^2 + b^2$$

$$c^2 = 1.5^2 + 2.5^2$$

$$c = \sqrt{8.5}$$

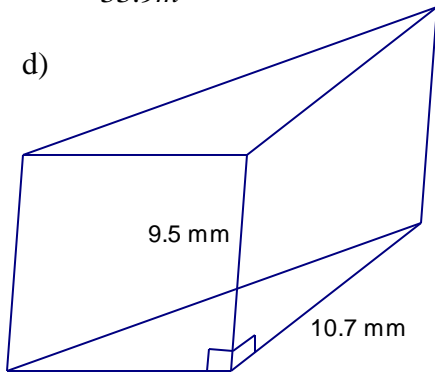
$$c = 2.9m$$

$$SA = 2\left(\frac{3(2.5)}{2}\right) + 3(3) + 2(3)(2.9)$$

$$= 7.5 + 9 + 17.4$$

$$= 33.9m^2$$

d)



$$8.3 \text{ mm}$$

$$c^2 = a^2 + b^2$$

$$c^2 = 8.3^2 + 10.7^2$$

$$c = \sqrt{183.38}$$

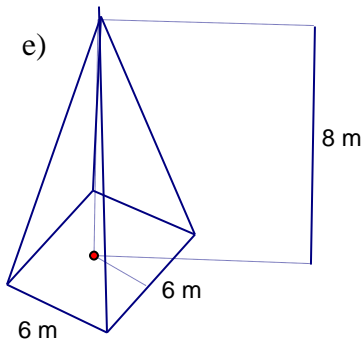
$$c = 13.5mm$$

$$SA = 2\left(\frac{8.3(10.7)}{2}\right) + 10.7(9.5) + 8.3(9.5) + 13.5(9.5)$$

$$= 88.81 + 101.65 + 78.85 + 128.25$$

$$= 397.56mm^2$$

e)



$$c^2 = a^2 + b^2$$

$$c^2 = 3^2 + 8^2$$

$$c = \sqrt{73}$$

$$c = 8.5m$$

$$SA = 6(6) + 4\left(\frac{6(8.5)}{2}\right)$$

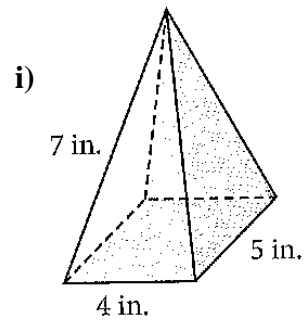
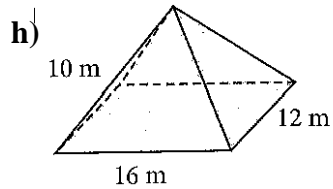
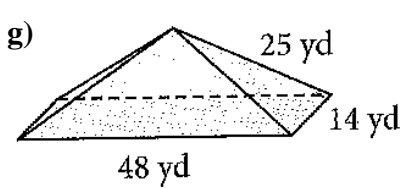
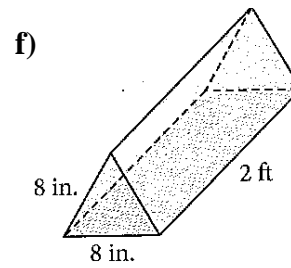
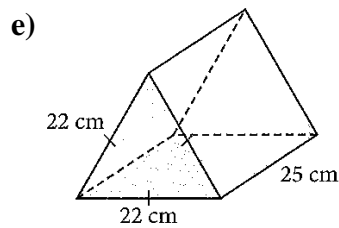
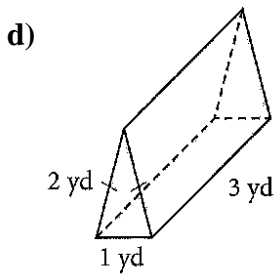
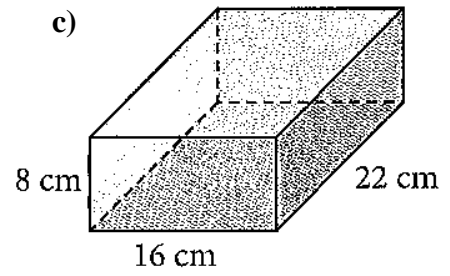
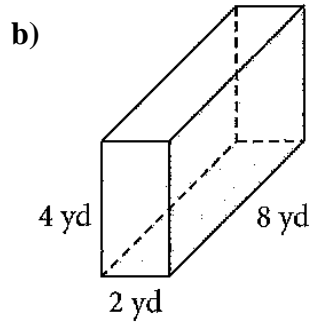
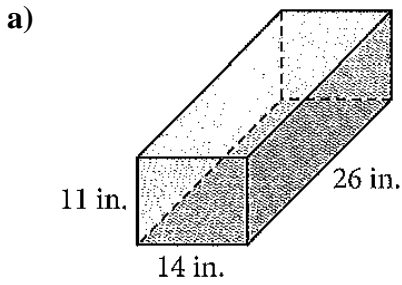
$$= 36 + 102$$

$$= 138m^2$$

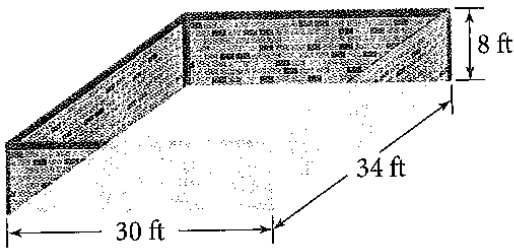
✚ homework assignment: Lesson 8 – 3 Surface Area of Prisms and Pyramids

Lesson 8 – 3: Surface Area of Prisms and Pyramids

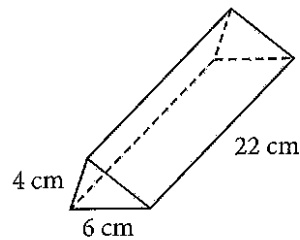
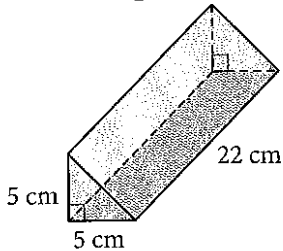
1. Find the surface area of each prism.



2. Wayne is spraying a sealant on the concrete floors and walls in the basement. The basement floor is a rectangular prism as shown in the diagram. What area does Wayne need to seal? **remember the ceiling does not get sealant

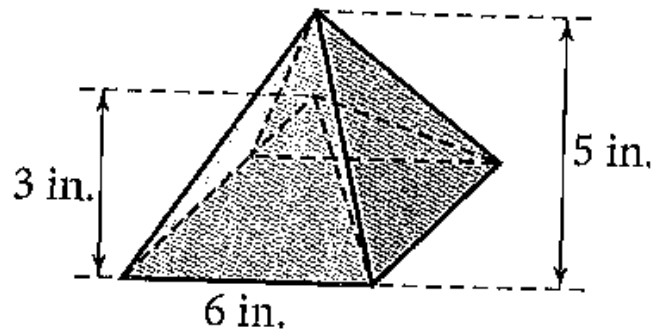


3. Which has the greater surface area, a right triangular prism or an isosceles triangular prism?



4. A toque company has decided to package their product in a package shaped as a pyramid with dimensions shown. The package is a shorter pyramid within a taller pyramid both with the same base area and shape.

a) Find the surface area of each pyramid.



b) The material used to make the larger pyramid costs $\$0.25/\text{in}^2$ while the smaller pyramid costs $\$0.21/\text{in}^2$. Calculate the cost of the complete container.