Section 1.7

October 10, 2012
10:53 AM

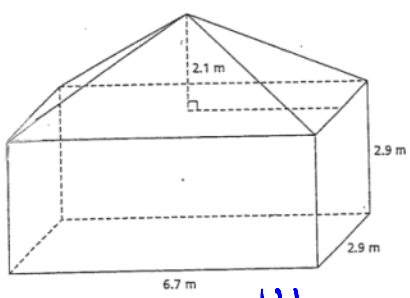
Math 10 N Douglas

Section 1.7
Solving Problems Involving Problems

COMPOSITE OBJECT

A shape made up of two or more shapes combined

Example 1: Determine the volume of this composite object to the nearest tenth of a cubic metre.



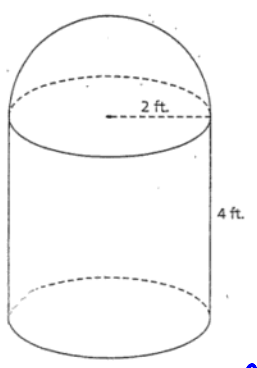
$Vol_{PRISM} \rightarrow V = A_B h = lwh = (6.7)(2.9)(2.9) = 56.4m^3$

$Vol_{PYRAMID} \rightarrow V = \frac{A_B h}{3} = \frac{lwh}{3} = \frac{(6.7)(2.9)(2.1)}{3} = 13.6m^3$

$V_{TOTAL} = 56.4m^3 + 13.6m^3 = \boxed{70.0m^3}$

$Vol = Vol_{Prism} + Vol_{Pyramid}$

Example 2: Determine the surface area if this composite object to the nearest square foot.



$SA_{CYL} \rightarrow SA = \pi r^2 + 2\pi rh = \pi(2)^2 + 2\pi(2)(4)$
(bottom circles) (Tube)
$= 75.4ft^2$

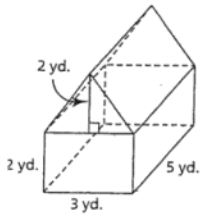
$SA_H \rightarrow SA = 2\pi r^2 = 2\pi(2)^2 = 25.1ft^2$
(not incl. bottom)

TOTAL $SA = 75.4ft^2 + 25.1ft^2$

$\boxed{= 100.5ft^2}$

$SA = SA_{CYL} + SA_H - A_{CIRCLE}$

Example 3: A cabana a sucre is a composite object formed by a rectangular prism with a right triangular prism as a roof. Determine the surface area of the cabana a sucre in square meters.



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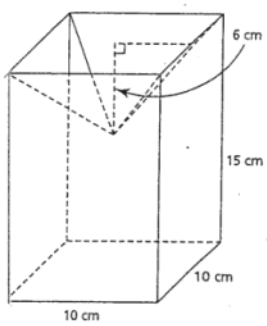
Example 4: Determine the volume and surface area of the composite object.



$V_{PRISM} = A_B h = lwh = (10)(10)(15) = 1500\,cm^3$

$V_{PYRAMID} = \frac{A_B h}{3} = \frac{lwh}{3} = \frac{(10)(10)(6)}{3} = 200\,cm^3$

$V = V_{PR} - V_{PY} = 1500\,cm^3 - 200\,cm^3 = \boxed{1300\,cm^3}$

$Vol = V_{PRISM} - V_{PYRAMID}$

$SA = SA_{PRISM} - A_{TOP} + SA_{PYRAMID} - A_{BOTTOM}$

$\boxed{SA = 760\,cm^2}$

HW: pg. 59 - 61
3 – 6, 8, 9