4-11-18

Aim: SWBAT apply surface area and volume formulas.

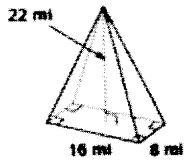
HW: None

Do Now: Packet Page 28

Homework - Volume

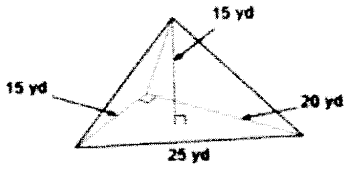
For each of the following, use a formula and show your substitution. Don't forget to label your answers. Round your answers to the nearest tenth if necessary.

1)



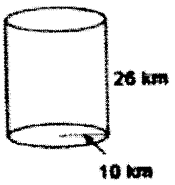
$V = \frac{1}{3}Bh$
$V = \frac{1}{3}(16 \cdot 8)(22)$
$V = 938.6666\ldots$
$V \approx 938.7\ mi^3$

2)



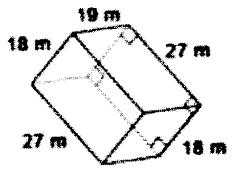
$V = \frac{1}{3}Bh$
$V = \frac{1}{3}(\frac{1}{2} \cdot 20 \cdot 15)(15)$
$V = \frac{1}{3}(150)(15)$
$V = 750\ yd^3$

3)



$V = Bh$
$V = \pi \cdot 10^2 \cdot 26$
$V = 2600\pi$
$V = 8168.14089\ldots$
$V \approx 8168.1\ km^3$

4)

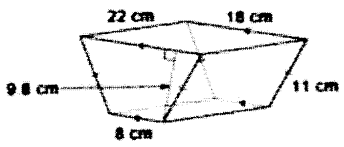


$V = Bh$
$V = (27 \cdot 19)(18)$
$V = 9234\ m^3$

5)

$V = \frac{4}{3}\pi r^3$
$V = \frac{4}{3} \cdot \pi \cdot 23^3$
$V = 16222\frac{2}{3}\pi$
$V = 50965.0142\ldots$
$V \approx 50965.0\ mi^3$

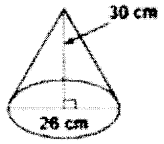
6)



$V = Bh$
$V = \left(\frac{(8+18)(9.8)}{2}\right)(22)$
$V = 2802.8\ cm^3$

26

7)



$V = \frac{1}{3}Bh$

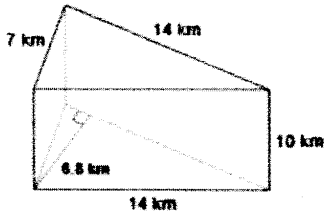
$V = \frac{1}{3}(\pi \cdot 13^2)(30)$

$V = 1690\pi$

$V = 5309.29158...$

$V \approx 5309.3\ cm^3$

8)

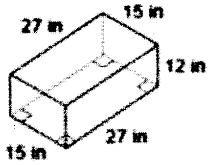


$V = Bh$

$V = \left(\frac{(14)(6.8)}{2}\right)(10)$

$V = 476\ km^3$

9)



$V = Bh$

$V = (15.27)(12)$

$V = 4860\ in.^3$

10)

$V = \frac{4}{3}\pi r^3$

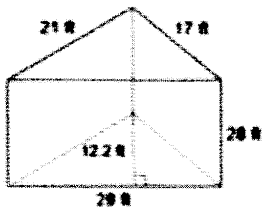
$V = \frac{4}{3} \cdot \pi \cdot 11^3$

$V = 1774\frac{2}{3}\pi$

$V = 5575.27976...$

$V \approx 5575.3\ cm^3$

11)

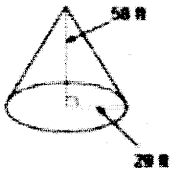


$V = Bh$

$V = \left(\frac{(29)(12.2)}{2}\right)(28)$

$V = 4953.2\ ft^3$

12)



$V = \frac{1}{3}Bh$

$V = \frac{1}{3}(\pi \cdot 29^2)(58)$

$V = 16259\frac{1}{3}\pi$

$V = 51080.2021...$

$V \approx 51080.2\ ft^3$

Aim: SWBAT use surface area and volume to solve problems.

Do Now: Explain the difference between surface area and volume. _____

_____

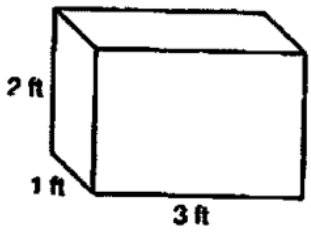
_____

_____

Notes.

Now you will need to use what you learned about surface area and volume to solve word problems. You will need to pay close attention the wording to decide what is being asked – you will not always see the words "surface area" or "volume" in the question.

Example 1) A toy maker will paint four sides of this toy chest. He will not paint the bottom or top surface. How many square feet of the chest will the toymaker paint?



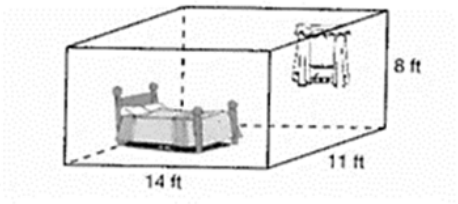
A) Draw the faces of the toy chest that the toymaker will paint and label their dimensions.

B) Find the surface area of the sides the toymaker will paint?
(Show Work using a formula)

He will paint _____ square feet

28

Example 2) Justin is designing his bedroom in the shape of a rectangular prism. His model for the bedroom is shown below.



A) What will be the total volume of his bedroom? (Show Work using a formula)

B) If Justin decides to increase the width of his bedroom by 3 feet, what would be the new volume? (Show Work using a formula)

Example 3) Maxwell wants to know how much space his globe occupies. He measured its diameter to be 7 feet.

A) Should he find its surface area or volume?

B) How much space does Maxwell's globe take up? (Show Work using a formula)

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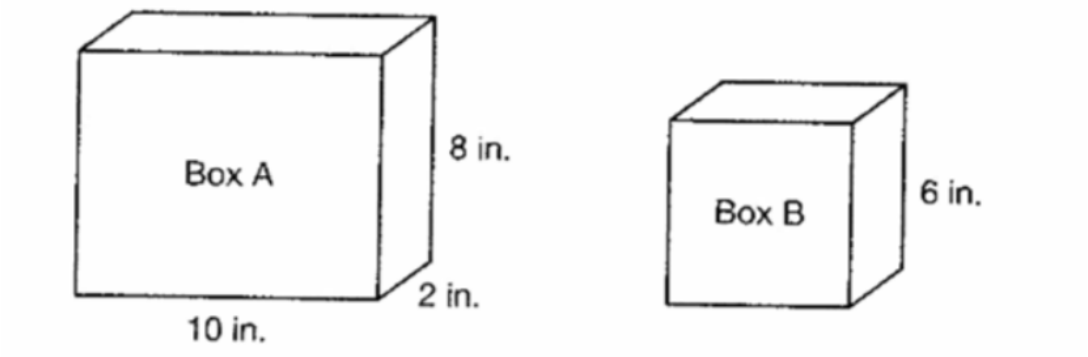
Example 4) Mrs. Thompson needs to wrap both of the boxes below. How much wrapping paper will she need to wrap both presents?



A) Do we need to use volume or surface area to solve this problem?

B) How much wrapping paper Mrs. Thompson needs to wrap Box A? (Show Work)

C) How much wrapping paper Mrs. Thompson needs to wrap Box B? (Show Work)

D) What is the total amount of wrapping paper Mrs. Thompson will need to wrap the presents? (Show Work)