Partner Problems

In this activity, you will partner with the person beside you. One partner will face towards the board and one away. The person facing the board must explain the problems on the board in any way they would like, but they cannot write anything down. When the problem is completed, switch.

Packing

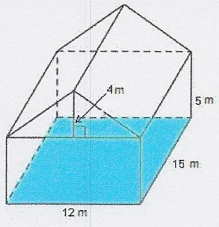
Granola bars have a height of 2 cm, a length of 10 cm and a width of 3 cm. If the boxes have a height of 6 cm, a length of 10 cm and a width of 12 cm, how many bars can you fit in a box?

We can fit: 3 heightwise
1 lengthwise
and 4 widthwise.

∴ we can fit 12 bars in the box

House

What volume of air would fit in this house?



$V_\Delta = \frac{b_\Delta \times h_\Delta}{2} \times h_{prism}$

$= \frac{(12m)(4m)}{2} \times 15m$

$= 360 m^3$

$V_\square = l \times w \times h$

$= (15m)(12m)(5m)$

$= 900 m^3$

$V_{Total} = 1260 m^3$

The volume of the house is $1260 m^3$

Not all Full

What will be the volume of liquid that will be in pool, shaped as a rectangular prism, with length 20 m, width 15 m and height 3 m, if it is ¾ full?

$V = l \times w \times h \times 3 \div 4$

$= (20m)(15m)(3m) \times 3 \div 4$

$= 675 m^3$

The volume of the pool is $675 m^3$

Chocolate Bars

Chocolate bars are 8 cm long, 1.4 cm high and 3 cm wide. What is the volume of a box that will fit 12 bars exactly?

$V_{bar} = l \times h \times w$

$V_{bar} = 8cm \times 1.4cm \times 3cm$

$= 33.6cm^3$

$V_{box} = V_{bar} \times 12$

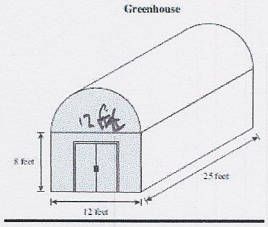
$= 33.6cm^3 \times 12$

$= 403.2cm^3$

The volume of the box is $403.2cm^3$

Greenhouse

What is the volume of the greenhouse shown?



radius = $\frac{\text{diameter}}{2}$

$V_{\circ} = \frac{\pi r^2 h}{2}$

$= \frac{\pi (6ft)^2 (25ft)}{2}$

$= 1413 ft^3$

$V_{\square} = l \times w \times h$

$= (25ft)(12ft)(8ft)$

$= 2400 ft^3$

$V_{Total} = 3813 ft^3$

The volume of the greenhouse is $3813 ft^3$