Station #1:

a) What 3-D shape does this tissue box represent? rectangular prism

b) How much space is there for the tissues? $V = A_{Base} \cdot h$
$= (3 \cdot 9) \cdot 2$
$= 54 \text{ in}^3$

Station #2:

Toblerone candy is packaged as shown below.

a) What 3-D shape is the box? Triangular Prism

b) How much space is there for the candy?
$V = A_{Base} \cdot h$
$= \left(\frac{6 \cdot 4}{2}\right) 24 = 288 \text{ cm}^3$

c) If each piece of candy requires 12 cm^3 of room, how many pieces of candy can fit in one Toblerone box?
$288 \text{ cm}^3 \times \frac{1 \text{ candy}}{12 \text{ cm}^3} = 24 \text{ candies}$

Station #3:

A Campbell's soup can measures 30 cm in width and 42 cm in height.

How much soup can fit in the can?

$V = A_{Base} \cdot h$
$= (225\pi)42 = 9450\pi \text{ or } \approx 29,688.05 \text{ cm}^3$

Station #4:

A birthday hat measures 6 inches wide and 4 inches tall.

a) They've run out of paper plates at the party. You decide to use your hat as scoop! How much space is there for your chips to fit inside?

$$V = \frac{A_{Base} \cdot h}{3} = \frac{9\pi \cdot 4}{3} = 12\pi \text{ or } \approx 37.68 \text{ in}^3$$

b) If each chip takes up 3 in^3 of space, how many chips will fit in your hat?

$$37.68 \text{ in}^3 \times \frac{1 \text{ chip}}{3 \text{ in}^3} \approx 12 \text{ chips}$$

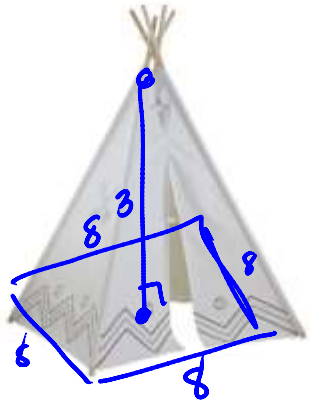
Station #5:

Lindsay's princess playhouse will be in the shape of her favorite solid, a regular square pyramid! The square base has a perimeter of 32 feet. The height of her playhouse will be 3 feet. How much space will she have to play?

$$V = \frac{A_{Base} \cdot h}{3}$$

$$= \frac{8 \cdot 8 \cdot 3}{3}$$

$$= 64 \text{ ft}^3$$



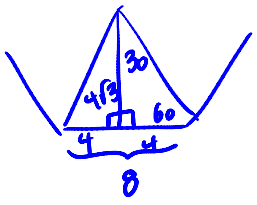
Station #6:

A regular hexagonal cake is shown. If the perimeter of the cake is 48 inches and the height of the cake is 3 inches, how much cake is there?

$$V = A_{Base} \cdot h$$

$$= 96\sqrt{3} \cdot 3$$

$$= 288\sqrt{3} \text{ in}^3 \text{ or } \approx 498.8 \text{ in}^3$$



$$\frac{48}{6} = 8$$

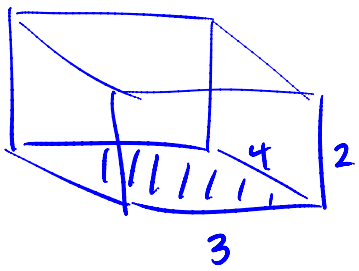
$$A_{Base} = \frac{a \cdot p}{2}$$

$$= \frac{4\sqrt{3} \cdot 48}{2}$$

$$= 96\sqrt{3}$$

Station #7:

Luke's swimming pool is 3 ft. by 4 ft. and 2 ft. tall. How many gallons of water will it hold? (1 gal is approximately 0.134 ft^3.)



$V = A_{Base} \cdot h$

$= (3 \cdot 4) \cdot 2$

$= 24\ ft^3$

$\frac{gal}{ft^3} \quad \frac{1}{.134} = \frac{x}{24}$

$.134x = 24$

$x = 179.1\ gal$

Station #8:

The radius of a large snow cone is 3 times the radius of a small snow cone. How much more snow cone does the person who orders a large snow cone get compared to the person who orders a small snow cone, if the heights of the snow cone are the same?

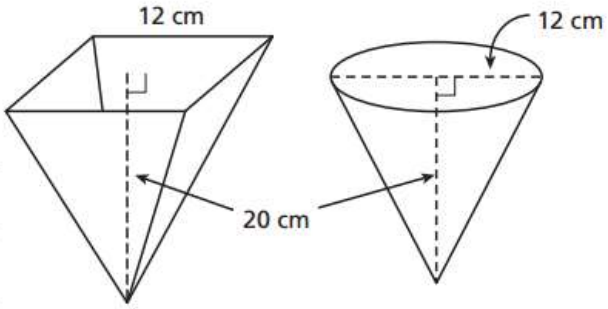
The person gets 3 x 3 or 9 times more snow cone!

What if the radius of the snow cones stay the same size, but now the height of the larger snow cone is 3 times larger than the small snow cone?

The person gets 3 times more snow cone!

Station #9:

Popcorn is available in two cups: a square pyramid or a cone as shown.
The price of each cup of popcorn is the same. Which cup is the better deal? Explain.



$V = \frac{A_{Base} \cdot h}{3}$

$= \frac{(12\ 12) \cdot 20}{3}$

$= 960\ cm^3$

$V = \frac{A_{Base} \cdot h}{3}$

$= \frac{\pi r^2 \cdot h}{3}$

$= \frac{\pi (12)^2 \cdot 20}{3}$

$= 960\pi\ cm^3$

or $\approx 3{,}015.9\ cm^3$

The cone is the better deal, blc it gives 3.14 times more popcorn!!! ☺