Name: KEY

Surface Area and Volume Activity

Station 1:

Clorox Wipes (Cylinder)

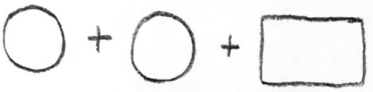
Find the volume and surface area.

Diameter = 4 in
Radius = 2 in
Height = 8 in

Base Area: $\pi \cdot 2^2 =$ 12.56 in²

$12.56 \cdot 8 =$ **100.48 in³ = V**

12.56 + 12.56 + 100.48



$\rightarrow 12.56 \cdot 8 = 100.48$

125.6 in² = SA

Station 2:

Cardboard box (Rectangular Prism)

Find the volume and surface area.

Dimensions: 6 in x 8 in x 10 in

Volume = 480 in³

$6 \times 8 = 48$ $6 \times 10 = 60$ $8 \times 10 = 80$

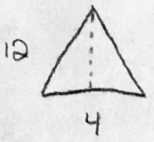
$6 \times 8 = 48$ $6 \times 10 = 60$ $8 \times 10 = 80$

376 in² = SA

Station 3:

Taped Binder (Triangular Prism)

Find the volume and surface area.



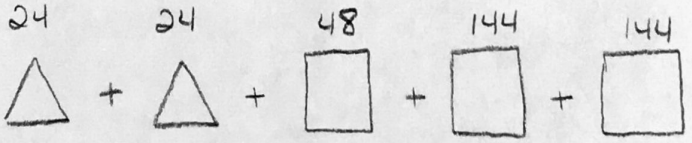
h = 12

base area

$\frac{1}{2}(4)(12) = 24$ in²

$24 \cdot 12 =$ **288 in³ = V**

24 + 24 + 48 + 144 + 144



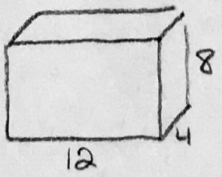
384 in² = SA

Station 4:

A rectangular prism has the following dimensions: 8" x 12" x 4"

Find the volume and surface area.

Volume = 384 in³



$8 \cdot 4 > 64$
$8 \cdot 4 > 64$
$8 \cdot 12 > 96$
$8 \cdot 12 > 96$

$4 \cdot 12 > 192$
$4 \cdot 12 > 192$

352 in² = SA

Station 5:

Part 1)

A square-based prism has a height of 22 inches. What is the length of each side of the prism's square base if the volume is 4,312 cubic inches?

$4312 = x^2 \cdot 22$

$196 = x^2$

$x = 14\text{ in}$

Part 2)

A cylinder has a height of 19 cm. If the volume of the cylinder is 2,923.34 cubic centimeters, what is the radius of the cylinder's base?

$2923.34 = \pi \cdot r^2 \cdot 19$

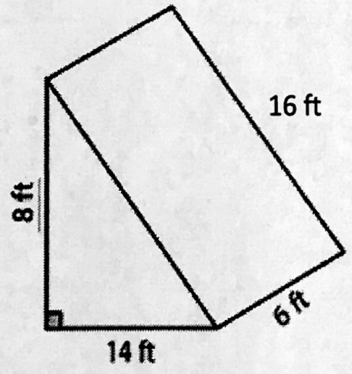
$153.86 = \pi \cdot r^2$

$49 = r^2$

$7\text{cm} = r$

Station 6:

Find the volume and surface area.



$\frac{1}{2}(14)(8) = 56$

$56 \cdot 6 = 336\text{ ft}^3 = V$

$16 \cdot 6 = 96$

$14 \cdot 6 = 84$

$8 \cdot 6 = 48$

$+56$

$+56$

$340\text{ ft}^2 = SA$