

Ancient Civilizations

NETS, SA, AND VOLUME CALCULATIONS



MATHEMATICIAN:

DIRECTIONS

1. Each team member will create a net of the following shapes:
 - a. Right Rectangular Prism
 - b. Right Rectangular Pyramid
 - c. Triangular Prism
 - d. Triangular Pyramid
 - e. Cube
2. Assign dimensions to each shape within the given parameters.
3. I suggest using a ruler to decide your dimensions, as these nets will become your 3D shapes for your diorama.
 - a. You may not use 1 inch for any dimension.
4. Solve for the surface area and volume of each 3D model.
 - a. Use the 3D models provided in class and their nets to make sense of the nets you are calculating.
5. I suggest doing your work on a whiteboard and writing your final calculations on the packet in a clean, organized format.

Once you have finished your handout, staple your work to the formative rubric and turn it in for grading.

Example (Right Rectangular Prisms)

Member # 1: Mrs. Grosso

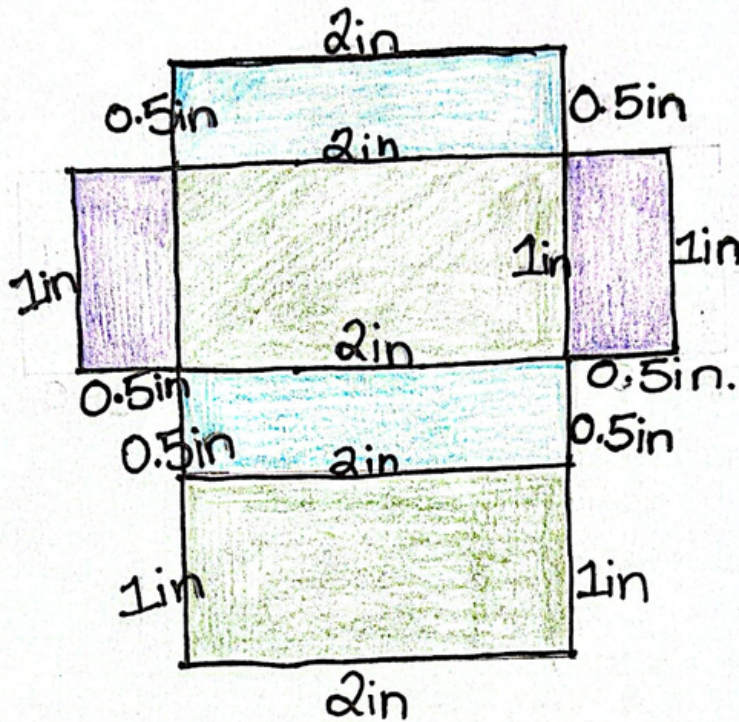
Right Rectangular Prism

L= 2 in

W= 0.5 in

H= 1 in

Net Sketch:



Surface Area Calculations:

Top and Bottom:

$$\begin{aligned} 2\text{ in} \times 0.5\text{ in} &= 1\text{ in}^2 \\ 1\text{ in}^2 \times 2 &= 2\text{ in}^2 \end{aligned}$$

Side 1 and Side 2:

$$\begin{aligned} 2\text{ in} \times 1\text{ in} &= 2\text{ in}^2 \\ 2\text{ in}^2 \times 2 &= 4\text{ in}^2 \end{aligned}$$

Front and Back:

$$\begin{aligned} 1\text{ in} \times 0.5\text{ in} &= 0.5\text{ in}^2 \\ 0.5\text{ in}^2 \times 2 &= 1\text{ in}^2 \end{aligned}$$

$$\begin{array}{r} 2\text{ in}^2 \\ + 4\text{ in}^2 \\ 1\text{ in}^2 \\ \hline \textcircled{7\text{ in}^2} \end{array}$$

Volume:

$$\begin{aligned} 2\text{ in} \times 1\text{ in} \times 0.5\text{ in} \\ = \textcircled{1\text{ in}^3} \end{aligned}$$

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RIGHT RECTANGULAR PRISM

L= _____ IN

W= _____ IN

H= _____ IN

L ≤ 7", W ≤ 4", H ≤ 3"

NET SKETCH:

SURFACE AREA CALCULATIONS

TOTAL SURFACE AREA:

VOLUME

TOP AND BOTTOM:

SIDE 1 AND SIDE 2

FRONT AND BACK:

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RIGHT RECTANGULAR PYRAMID

L= _____ IN

W= _____ IN

S= _____ IN

Base $\leq 6"x6"$, Slant Height $\leq 5"$

NET SKETCH:

SURFACE AREA CALCULATIONS:

TOTAL SURFACE AREA:

VOLUME

BASE:

TRIANGULAR FACE (X4)

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TRIANGULAR PRISM

W/B= _____ IN H= _____ IN L= _____ IN

Length $\leq 7"$, Triangle Dimensions $\leq 5"$

NET SKETCH:

SURFACE AREA CALCULATIONS:

TOTAL SURFACE AREA:

~~VOLUME~~

TRIANGULAR FACE (X2):

RECTANGULAR SIDE (X2):

RECTANGULAR BASE:

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TRIANGULAR PYRAMID

B= _____ IN S= _____ IN

Base Sides $\leq 5"$, Slant Height $\leq 5"$

NET SKETCH:

SURFACE AREA CALCULATIONS:

TOTAL SURFACE AREA:

VOLUME

TRIANGULAR FACE (X4):

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CUBE

SIDE LENGTH: _____ IN

Side length $\leq 3.5''$

NET SKETCH:

SURFACE AREA CALCULATIONS:

TOTAL SURFACE AREA=

VOLUME

SQUARE FACE (X6)