## Surface Area \& Volume of the Six Basic 3D Images of Plane Euclidean Geometry. All answers for Surface Area \& Volume must have the correct labels.

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| :---: | :---: | :---: |
| Sphere: $\mathrm{TSA}=4 \pi \times(\text { radius })^{2}$ | Cylinder: TSA $=2 \pi \times(\text { radius })^{2}+\mathrm{CxA}$ | Cone: $\mathrm{TS} A=\boldsymbol{\pi}(\text { (radius })^{2}+1 / 2 \mathrm{CxS}$ |
| Total Surface Area $=4 \pi \mathrm{r}^{2}$ | $\text { Total Surface Area }=2 \pi \mathrm{r}^{2}+2 \pi \mathrm{rA}$ | $\begin{gathered} \text { Total Surface Area }=\pi r^{2}+ \\ 1 / 2(2 \pi r)(S) \end{gathered}$ |
| Sphere: $\mathrm{V}=(4 / 3) \pi \times(\text { radius })^{3}$ | Cylinder: $\mathrm{V}=$ base area $\times$ height |  |
| $\text { Volume }=4 / 3 \pi r^{3}$ | $\text { Volume }=\left(\pi r^{2}\right) \times \mathrm{A}$ | Cone: $\mathrm{V}=(1 / 3) \times$ base area $\times$ Altitude $\text { Volume }=1 / 3\left(\pi r^{2}\right)(\mathrm{A})$ |


| $\mathrm{S}=$ side dimenstion | Length, Width, Height | $\mathrm{S}=\text { Side } \quad \mathrm{A}=\text { Altitude } \mathrm{B}=\text { Base }$ |
| :---: | :---: | :---: |
| Cube: $\mathrm{TSA}=6$ (side dimension) ${ }^{2}$ | Prisim: $\mathrm{TSA}=2(\mathrm{lw})+2(\mathrm{wh})+2(\mathrm{lh})$ | $\underline{\text { Pyramid }}$ TSA $=$ base area +4 (TriangleAreas) |
| Total Surface Area $=6 \mathrm{~S}^{2}$ | Total Surface Area $=2 \mathrm{LW}+2 \mathrm{WH}+2 \mathrm{LH}$ | Total Surface Area $=B^{2} \times 4(1 / 2 \times B x S)$ |
| Cube: $\mathrm{V}=\left(\right.$ side dimension) ${ }^{3}$ | Prism: V $=$ base area $\times$ height | Pyramid: $\mathrm{V}=(1 / 3) \times$ base area $\times$ altitude |
| Volume $=S^{3}$ | Volume $=(1) \times(\mathrm{w}) \times(\mathrm{h})$ | Volume $=1 / 3\left(\mathrm{~B}^{2}\right) \times(\mathrm{A})$ |

