Driving Question: *How do builders estimate the total construction cost of a building?*

Your Task: Using the measurements from SketchUp for your composite footprint, determine the area for each floor. Then calculate the total floor area, multiplying the area for one floor by the number of floors that you have decided for your section. Once all group members have calculated the area for their sections, find the total area (TA) of your skyscraper. Finally, using the cost per square foot which your group has determined for your building (based on aesthetics, sustainability, height, etc.), calculate the estimated total cost of your skyscraper.

(Example)

***Draw an example of the shape.***

**20’**

***Copy the critical measurements from***

***Phase 2-b onto the figure.***

**30’**

|  |  |
| --- | --- |
| ***Name of Central geometric shape*** | **Regular Pentagon** |
| ***Area of Shape******(include Area formula)*** | $$A=\frac{1}{2}nas$$$$A=\frac{1}{2}(5)(20)(30)$$$$A=\frac{3000}{2}=1500 ft^{2}$$ |

***Shape #1***

***Draw an example of the shape.***

***Copy the critical measurements from***

***Phase 2-b onto the figure.***

|  |  |
| --- | --- |
| ***Name of Central geometric shape*** |  |
| ***Area of Shape******(include Area formula)*** |  |

***Shape #2***

***Draw an example of the shape.***

***Copy the critical measurements from***

***Phase 2-b onto the figure.***

|  |  |
| --- | --- |
| ***Name of geometric shape*** |  |
| ***Area of Shape******(include Area formula)*** |  |

***Shape #3***

***Draw an example of the shape.***

***Copy the critical measurements from***

***Phase 2-b onto the figure.***

|  |  |
| --- | --- |
| ***Name of Central geometric shape*** |  |
| ***Area of Shape******(include Area formula)*** |  |

***Total Area***

|  |  |
| --- | --- |
| ***Add: Area – Shape #1*** |  |
| ***Add: Area – Shape #2*** |  |
| ***Add: Area – Shape #3*** |  |
| ***Floor Area for your Section*** |  |
| ***Multiply: Number of Floors in your Section*** |  |
| ***Total Floor Area (TA) for your Section*** |  |
| ***Add: TA for your group member’s Section*** |  |
| ***Add: TA for your group member’s Section*** |  |
| ***Add: TA for your group member’s Section*** |  |
| ***Total Floor Area (TA) of your Skyscraper*** |  |
| ***Multiply: Estimated Cost per Square Foot*** |  |
| ***Estimated Total Cost of your Skyscraper*** |  |