Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Filling and Wrapping***

**1.2**

***Problem E***

 Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour \_\_\_\_



Find all the ways that 24 one inch cubes can be packed in a rectangular prism. Complete this table to show your results.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Length****(in.)** | **Width****(in.)** | **Height****(in.)** | **Volume****(in.3)** | **Surface Area****(in.2)** | **Sketch** |
| 1 | 24 | 1 |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| **Length****(in.)** | **Width****(in.)** | **Height****(in.)** | **Volume****(in.3)** | **Surface Area****(in.2)** | **Sketch** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |



 Which arrangement of cubes requires the box that can be made with the least material?

 Which requires the box that needs the most material?



 Which box shape would you recommend for shipping 24 one inch cubes? Explain your reasoning.



 Why do you think a company’s shipping directions called for shipping 24 cubes, rather than 26, in a box?