MATH/IDST 120 – Symmetry, Shape and Space
Explorations of Scale

Name:_____

TASK: Using the provided planet cards, lay out a two-dimensional scale model of our solar system. You must use the given unit of measure and your system must fit on your row of tables.

Planet	Distance*	Diameter**
Mercury	36	3,031
Venus	67	7,521
Earth	93	7,926
Mars	142	4,221
Jupiter	484	88,734
Saturn	891	74,566
Uranus	1,783	31,566
Neptune	2,794	30,199

* Distance from the sun, measured in millions of miles
** Approximate diameter of the planet, measured in miles

- How long is your table row? How can you relate this distance to the distance to the furthest planet? (Think "Our table row has to fit approximately 2,794 million miles.")

- What is the approximate scale of the planet cards in inches? (Hint: measure the largest planet card and assume the others relate.)

- Why is there no sun card?

SEE REVERSE FOR A HOMEWORK ASSIGNMENT!!

DUE NEXT CLASS

Answer the following questions about our activity today:

1. If we could make an accurate scale model with the planet cards used during the exercise, what would be the distance between Neptune and the sun? State your answer in terms of miles.

2. The diameter of the sun is 870,000 miles. The sun card to complete our planet model sets would be approximately how big? State your answer in terms of feet.

3. If the earth was the size of a peppercorn (0.08 inch), (1) how large would Jupiter be? (2) What would be the distance between the sun and Neptune? (Express your answer to this second question in terms of feet.)

Extra-Credit (5pts)

Explore Flatland from the perspective of scale by drawing a scene from the Flatland story – using at least some of Abbott's detail and an appropriate scale.

Abbott spends a great deal of time describing the people and environs of Flatland. Here are a few quotes to get you started thinking about the scale of your picture.

> *"The greatest length or breadth of a full grown inhabitant of Flatland may be estimated at about eleven of your inches. Twelve inches may be regarded as a maximum." (p8)*
>
> *"…of rejoicing in our country for many furlongs around." (p10)*
>
> *"The size of the sides would …depend upon the age of the individual. A Female at birth would be about an inch long, while a tall adult Woman might extend to a foot." (p28)*
>
> *"…Males of every class… the length of an adult's sides, when added together is two feet or a little more." (p28)*