Welcome cadets! You are about to embark on a fantastic journey through the cosmos. You are nearing the final steps of becoming one of the few 7th Grade students to be selected to go on the first Mars mission. Before you are selected for the crew the agency needs to verify your ability to work with the large numbers associated with the distance between planets. How are you supposed to travel there if you don’t know the distance, right?

To help us out with this the agency has provided us the Calculatron to help convert the distances. Use the directions below to convert the distances between the planets from decimal for to scientific notation.

*Look at the example below to see how the Calculatron works. Then covert the listed planets and fill the answers in on the line.*

Write each digit of the distance into the calculatron.
Place the red decimal point at the end of the number.
Then move the decimal point to the left until it is to the right of the first non-zero digit. Make sure to count how many times you move it!!
Erase all the zero digits after the decimal.
Fill in the scientific notation as "$ \times 10^{\text{number you counted}} "$.

*The boys in the lab have done one to show you.*

<table>
<thead>
<tr>
<th>3</th>
<th>6</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>0</th>
</tr>
</thead>
</table>

PA Math Standard(s): 2.1.8(A,B)
So $36,000,000 = 3.6 \times 10^7$ in scientific notation.

Now, test your knowledge and try to convert these planet distances from decimal to scientific notation using the chart and the calculatron. Write your answer in the space provided.

1. Venus: __________________ 2. Earth: __________________

Great work cadets!! Now its time to make sure we can move from scientific notation back to decimal numbers. Follow the instructions in the top right corner and use the calculatron in reverse to expand the numbers back to decimal form.

9. $7.4 \times 10^3 = \______________$
10. $4 \times 10^7 = \______________$
11. $6.15 \times 10^5 = \______________$
12. $6.25 \times 10^5 = \______________$
13. $4.6 \times 10^1 = \______________$
14. $5.35 \times 10^2 = \______________$

Congratulations! You have completed the large number training with flying colors!! You have mastered the methods used with the Calculatron and are on your way to becoming a full agent!! Take your worksheet and turn it into flight direction Mr. Smoyer to get your mission (extra) credit points!