Name:		Class:		

\*Before you start working: Yes, this is difficult, but yes, you can do it. You must **persevere.**\* 1.) Find the product.  $(1.9 \times 10^3)(4.5 \times 10^2)$ 

2.) Find the quotient.  $\frac{2.89 \times 10^2}{3.4 \times 10^{-2}}$ 

3.) Toshi and Owen need to add 4.9 X 10<sup>9</sup> and 4.1 X 10<sup>7</sup>. Toshi says they must use the equation (490 X 10<sup>7</sup>) + (4.1 X 10<sup>7</sup>), but Owen says they must use the equation (4.9 X 10<sup>9</sup>) + (0.041 X 10<sup>9</sup>). Are neither, one, or both students correct? Explain.

- 4.) Which of the following expressions is equivalent to 5,710,900?
  - (A) 5.7109 X 10<sup>-6</sup>
  - (B) 5.7109 X 10<sup>2</sup>
  - (C) 5.7109 X 10<sup>3</sup>
  - (D) 5.7109 X 10<sup>6</sup>
- 5.) Write the following numbers in order from LEAST to GREATEST.

5 x 10-6	- 9 x 10-3	-0.000002	0.00007
LEAST			GREATEST

6.) Suppose, at the end of one winter, there are about  $1.5 \cdot 10^7$  square kilometers of ice in the Arctic Ocean. By the end of summer, much of the ice has melted, and there are only about  $7 \cdot 10^6$  square kilometers of ice. How much ice melted? **Operation:** 

- - (B) 2.8 X 10<sup>6</sup> km
  - (b) 210 / 10 km
  - (C) 1.16 X 10<sup>7</sup> km
  - (D) 6.8 X 10<sup>7</sup> km
- 8.) A microscope is set so it makes an object appear 4 X 10<sup>2</sup> times larger than its actual size. A virus has a diameter of 2 X 10<sup>-7</sup> meters. How large will the diameter of the virus appear when it is viewed under the microscope? **Operation:** \_\_\_\_\_
  - (A) 8 X 10<sup>-14</sup> meters
  - (B) 8 X 10<sup>-5</sup> meters
  - (C) 8 X 10<sup>-4</sup> meters
  - (D)  $8 \times 10^5$  meters

## Selected Answers:

1.)	8.55 x 10 <sup>5</sup>	2.) 8.5 x 10 <sup>3</sup>	4.) D
6.)	8 x 10 <sup>6</sup> sq. km	7.) D	8.) B