## P.5. \#2.5b - Word Problems with Scientific hotation

Name: $\qquad$ Class: $\qquad$
*Before you start working: Yes, this is difficult, but yes, you can do it. You must persevere.*
1.) Find the product. $\left(1.9 \times 10^{3}\right)\left(4.5 \times 10^{2}\right)$
2.) Find the quotient. $\frac{2.89 \times 10^{2}}{3.4 \times 10^{-2}}$
3.) Toshi and Owen need to add $4.9 \times 10^{9}$ and $4.1 \times 10^{7}$. Toshi says they must use the equation $\left(490 \times 10^{7}\right)+\left(4.1 \times 10^{7}\right)$, but Owen says they must use the equation $\left(4.9 \times 10^{9}\right)+(0.041 \times$ $10^{9}$ ). Are neither, one, or both students correct? Explain.
4.) Which of the following expressions is equivalent to $5,710,900$ ?
(A) $5.7109 \times 10^{-6}$
(B) $5.7109 \times 10^{2}$
(C) $5.7109 \times 10^{3}$
(D) $5.7109 \times 10^{6}$
5.) Write the following numbers in order from LEAST to GREATEST.
$-9 \times 10-3 \quad-0.0000002$
0.00007

LEAST
$\qquad$
$\qquad$
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: $\qquad$
7.) The Moon takes about 28 days to orbit the Earth, going a distance of about $2.413 \times 10^{6}$ kilometers. About how many kilometers does the Moon travel during one day of its orbit around the Earth? Operation: $\qquad$
(A) $8.6 \times 10^{4} \mathrm{~km}$
(B) $2.8 \times 10^{6} \mathrm{~km}$
(C) $1.16 \times 10^{7} \mathrm{~km}$
(D) $6.8 \times 10^{7} \mathrm{~km}$
8.) A microscope is set so it makes an object appear $4 \times 10^{2}$ times larger than its actual size. A virus has a diameter of $2 \times 10^{-7}$ meters. How large will the diameter of the virus appear when it is viewed under the microscope? Operation: $\qquad$
(A) $8 \times 10^{-14}$ meters
(B) $8 \times 10^{-5}$ meters
(C) $8 \times 10^{-4}$ meters
(D) $8 \times 10^{5}$ meters

## Selected Answers:

1.) $8.55 \times 10^{5}$
2.) $8.5 \times 10^{3}$
4.) $D$
6.) $8 \times 10^{6} \mathrm{sq}$. km
7.) $D$
8.) $B$

