Name: _____

Solve the following problems **without a calculator**. You _MUST_ show your work. *NO WORK = NO CREDIT.*

| 1. Write the number in scientific notation. | 2. Solve for h. |
|---|---|
| a) 0.00020 | $h^2 = \dfrac{9}{25}$ |
| b) 180,900,000 | |
| c) 0.0036 | |
| 3. What is the value of $x$ in the equation below?<br><br>$x^2 + 25 = 106$ | 4. Maryland has about $1.6 \times 10^4$ students enrolled in public schools. The United States has about $3.1 \times 10^9$ students enrolled in public schools. About how many times larger is the number of students enrolled in public schools in the United States than in Maryland? |

Solve the following problems **without a calculator**. You _MUST_ show your work. *NO WORK = NO CREDIT.*

| 4. Simplify in exponential form. | 2. A glass marble factory produces $4.5 \times 10^4$ marbles in 1,800 minutes. What is the factory's unit rate of production in marbles per minute? Write the answer in scientific notation. |
|---|---|
| a) $(3^{-2})(9^{-1})(3^3)$ | |
| b) $(3^2 \times 5^4)^2 (5^5)$ | |
| 3. Solve for $x$ in the equation.<br><br>$3x^2 + 27 = 54$ | 4. The volume of a cube is 125 cubic centimeters. What is the area of one side of the cube? |

## Homework - Wednesday (February 13, 2019)

Solve the following problems **without a calculator**. You _MUST_ show your work. _**NO WORK = NO CREDIT.**_

| | |
|---|---|
| 1. Simplify in scientific notation.<br><br>  a) $(1.5 \times 10^5)(2.3 \times 10^6)$<br><br><br><br>  b) $(6.5 \times 10^{15})(1.48 \times 10^8)$ | 2. What is the value of $x$ in the equation below?<br><br>  $x^2 + 1 = 50$ |
| 2. What is the value of the expression?<br><br>  $\dfrac{5^2 \cdot 3^6 \cdot 5^2}{3^4 \cdot 5^2 \cdot 3^2}$ | 4. A light year is defined as the distance light travels in one year. One light year is $9.46 \times 10^{12}$ kilometers. A galaxy is about 150,000 light years wide. About how many kilometers wide is the galaxy? |

## Homework - Thursday (February 14, 2019 )

Solve the following problems **without a calculator**. You _MUST_ show your work. _**NO WORK = NO CREDIT.**_

| | |
|---|---|
| 1. The population of North Dakota is about $8.3 \times 10^6$. The population of Canada is about $2.4 \times 10^{11}$. Approximately how many times larger is the population of Canada than North Dakota? | 2. The volume of a cube is 512 cubic inches. What is the length of one side of this cube? |
| 3. Which choice is both the square of an integer and the cube of an integer?<br><br>  a) 49<br><br>  b) 100<br><br>  c) 16<br><br>  d) 64 | 4. The area of a square is $36\text{cm}^2$. What is the perimeter, in cm, of the square? |