

Name \_\_\_\_\_

## Common Core Standard 8.EE.A.4 – Expressions and Equations

- One of the most common jobs in the United States is nursing. In scientific notation, there are approximately  $2.6 \times 10^6$  people working in this field. Each year the number of nurses increases by 3.5%. By how many will the number of nurses increase in one year? Be sure to explain your answer.

- A  $9.1 \times 10^4$   
B  $1.5 \times 10^4$   
C  $4.5 \times 10^5$   
D  $8.6 \times 10^3$

## Common Core Standard 8.EE.A.4 – Expressions and Equations

- The half-life of uranium-238 is  $4.5 \times 10^9$  years. The half-life of uranium-234 is  $2.5 \times 10^5$  years. How many times greater is the half-life of uranium-238 than that of uranium-234. Be sure to show your work.

- A  $4.5 \times 10^3$   
B  $1.8 \times 10^4$   
C  $4.5 \times 10^4$   
D  $1.8 \times 10^5$

## Common Core Standard 8.EE.A.4 – Expressions and Equations

- Write how many particles of dust are present in the house if the total volume of the house is 4,200 cubic meters and there are  $3.4 \times 10^9$  particles of dust per cubic meter. Be sure to show your work.

- A  $6.1 \times 10^{11}$   
B  $2.6 \times 10^{10}$   
C  $3.2 \times 10^9$   
D  $1.4 \times 10^{13}$

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Common Core Standard 8.EE.A.4 – Expressions and Equations

- The radius of the moon is approximately  $1.7 \times 10^3$  km. Calculate its approximate volume. Write the answer in scientific notation. Use  $\pi = 3$ . Be sure to show your work.

- A  $2.7 \times 10^8$
- B  $1.97 \times 10^{10}$
- C  $4.2 \times 10^8$
- D  $2.68 \times 10^{10}$

Common Core Standard 8.EE.A.4 – Expressions and Equations

- The mass of a dust particle is  $7.53 \times 10^{-10}$  kg. If there were  $2.9 \times 10^6$  particles on the floor, what would be the total mass of that dust? Be sure to show your work.

- A  $2.3 \times 10^{-5}$  kg
- B  $1.2 \times 10^{-4}$  kg
- C  $3.2 \times 10^{-3}$  kg
- D  $2.2 \times 10^{-3}$  kg

Common Core Standard 8.EE.A.4 – Expressions and Equations

- Sand particles range in diameter from  $2.5 \times 10^{-3}$  inches to  $7.9 \times 10^{-2}$  inches. Find the difference between the largest and the smallest sand particles. Be sure to show your work.

- A  $7.7 \times 10^{-2}$  inches
- B  $6.6 \times 10^{-2}$  inches
- C  $5.7 \times 10^{-1}$  inches
- D  $7.5 \times 10^{-3}$  inches