

## Algebra I EOC Practice #8

**SPI 3102.2.2 Multiply, divide, and square numbers expressed in scientific notation.**

- One gram of water contains about  $3.34 \times 10^{22}$  molecules. About how many molecules are contained in  $5.0 \times 10^2$  grams of water?
  - $1.67 \times 10^{25}$
  - $8.84 \times 10^{24}$
  - $6.68 \times 10^{19}$
  - $1.49 \times 10^{-20}$
- Simplify  $(6.5 \times 10^3)^2$ .
  - $13 \times 10^6$
  - $13.0 \times 10^6$
  - $4.23 \times 10^7$
  - $42.2 \times 10^8$
- The radius of a red blood cell is approximately  $1.9375 \times 10^{-7}$  meters. Since a red blood cell is a circular shape, use  $A = \pi r^2$  to approximate the area of a red blood cell.
  - $3.875 \times 10^{-14}$
  - $1.179 \times 10^{-13}$
  - $1.179 \times 10^{15}$
  - $3.875 \times 10^{-13}$
- Simplify  $(3.15 \times 10^3)(5.0 \times 10^5)$ . Express your answer in scientific notation.
  - $1575 \times 10^9$
  - $1.575 \times 10^8$
  - $15.75 \times 10^{10}$
  - $1.575 \times 10^9$
- Evaluate and express the answer in scientific notation.
$$\frac{6.3 \times 10^9}{1.3 \times 10^2}$$
  - $48 \times 10^8$
  - 48000000
  - $4.8 \times 10^7$
  - $4.8 \times 10^1$
- Which expression is closest to  $(7.09 \times 10^{-8})(9.033 \times 10^{27})$ ?
  - $6.404 \times 10^{20}$
  - $6.404 \times 10^{35}$
  - $16.123 \times 10^{19}$
  - $16.123 \times 10^{35}$
- The approximate population of Arizona is  $4.778 \times 10^6$  people. The land area is about  $1.14 \times 10^5$ . What is the population density per square mile?
  - about 0.24 people per square mile
  - about 4,892,000 people per square mile
  - about  $5.45 \times 10^{11}$  people per square mile
  - about 42 people per square mile
- If an infrared wavelength measures about  $8 \times 10^{-7}$  meters, and a blue wavelength measures approximately  $4.5 \times 10^{-7}$  meters, about how many times longer is the infrared wavelength than the blue wavelength?
  - about 0.56 times
  - about 1.8 times
  - about  $3.6 \times 10^{-13}$  times
  - about  $1.25 \times 10^{-6}$  times