

N3CS19**Practice Set 15**

Instructions: Answer each question on loose leaf, quad-ruled (graph paper), headed properly and written in lead-graphite. Remember to fold paper along the center, work exercises in order top to bottom, left column then right column. Staple multiple pages. If your current grade pct. is $\geq 82\%$, you may complete between 2 and 4 exercises per section.

1) Compute in Scientific Notation

a) $(3.9 \cdot 10^2)(2.3 \cdot 10^6)$ b) $(4.18 \cdot 10^{-4})(9 \cdot 10^{-4})$ c) $\frac{9.45 \cdot 10^{10}}{1.5 \cdot 10^6}$ d) $\frac{1.14 \cdot 10^6}{4.8 \cdot 10^{-6}}$

2) Write the repeating decimals as fractions

a) $0.\overline{78}$ b) $0.\overline{123}$ c) $0.8\overline{4}$ d) $3.1\overline{6}$

3) Estimate the irrational expressions

a) $1 + \sqrt{18}$ b) $4\sqrt{27}$ c) $\sqrt{24} + \sqrt{50}$ d) $\frac{\sqrt{825}}{\sqrt{200}}$

4) Compute the perimeter of the squares with the given area.

a) 484cm^2 b) 841mm^2 c) 4900ft^2 d) 10.24m^2

5) Compute the volume of cubes with the given side lengths; all units are mm

a) $2x$ b) $3x^2$ c) $4x^2y$ d) $\frac{2}{3}x^2y^3$

6) Compute the the Kinetic Energy of a body with the given mass and speed using the formula

$KE = \frac{1}{2} \cdot m \cdot v^2$, where 'm' is the mass (kg), and 'v' is the speed $\left(\frac{m}{s}\right)$. Include units in your solution.

a) $\begin{matrix} m = 2 \\ v = 10 \end{matrix}$ b) $\begin{matrix} m = 4 \\ v = 10 \end{matrix}$ c) $\begin{matrix} m = 1 \\ v = 10 \end{matrix}$ d) $\begin{matrix} m = 8 \\ v = 10 \end{matrix}$

7) Neurons are cells in the nervous system that process and transmit information. An average neuron is about $5 \cdot 10^{-6}$ meter in diameter. A baseball's diameter is 0.075m. How many times larger is a baseball to a neuron? Show your result in standard form and Scientific notation.

8) LeBron James' yearly salary with the Lakers is \$38,325,000. The average yearly salary of a teacher in the Los Angeles Unified School District (LAUSD) is \$75,000.

a) How many times larger is LeBron's salary to an LAUSD teacher? Show your result in standard form and Scientific Notation.

b) How many teacher salaries equal LeBron's salary?

c) State all the number families your solution to 'a' belongs to; justify your response.