

Name _____
Mrs. Roumbos

Date _____
8A Period _____

Mixed Review from 7th grade

I. Absolute Value:

A) Definition: The total distance the number is away from zero $|\pm x| = x$

B) Ex's 1) $|-6| =$ 2) $|-5| \cdot |3| =$ 3) $-|-4| =$ 4) $-|-2| - |-3| =$

5) $|5 + -11| =$ 6) $|5| + |-11| =$ 7) If $a * b = |a - b|$, what is the value of $6 * 8$?

II. Square Roots:

A) Definition: The square root of a number is a value that, when multiplied by itself, gives the number. Symbol: $\sqrt{\quad}$ Every positive number has two square roots, one positive and one negative. ex: $\sqrt{16} = -4$ and 4 or ± 4 . Principal Square root: The non-negative square root

B) Simplify:

1) $\sqrt{4} =$ 2) $-\sqrt{9} =$ 3) $\pm\sqrt{100} =$ 4) $-\sqrt{\frac{9}{144}} =$

5) $\sqrt{-81} =$ 6) $\sqrt{5+11} =$ 7) $-(\sqrt{144} - \sqrt{25}) =$

III. Cube Roots:

A) Definition: The cube root of a number is a special value that, when used in a multiplication **three times**, gives that number. Example: $3 \times 3 \times 3 = 27$, so the cube root of 27 is 3. Symbol: $\sqrt[3]{\quad}$. Ex: $\sqrt[3]{27} = 3$: you would say the cube root of 27 is 3

B) Simplify

1) $\sqrt[3]{8} =$ 2) $\sqrt[3]{-125} =$ 3) $\sqrt[3]{1} =$ 4) $-\sqrt[3]{1000} =$

IV. Scientific Notation

A) Definition: a way to write very small or very large numbers. Consists of two parts (1) a number between 1 & 10 and (2) a power of n: $a \times 10^n$

** When performing operations with Scientific Numbers it is a good idea to use a set of parentheses around each scientific number!!

B) Ex:s

1) Express the following in **scientific notation**:

a) 61,500 =

b) 0.07085 =

2) Express the following in **standard form**:

a) $1.09 \times 10^3 =$

b) $4.5 \times 10^{-2} =$

**3) Simplify the following

a) $2.85 \times 10^7 \cdot 3.16 \times 10^{-3} =$

b) $\frac{3.66 \times 10^{-5}}{2 \times 10^{-3}} =$

c) $\frac{8.2 \times 10^6 \cdot 5 \times 10^{-2}}{2 \times 10^2} =$

d) $6.5 \times 10^3 + 2.6 \times 10^4 =$

V. When comparing Scientific Numbers, the larger scientific number is the one with the higher exponent. If the exponents are the same, then compare the rational numbers themselves.

a) 4.45×10^3 _____ 6.3×10^5

b) 2.82×10^6 _____ 1.3×10^6