Name_____ Date_____

Mrs. Roumbos 8R Period_____

Comparing two numbers written in Scientific Notation

I. Steps:

1) Compare the powers of ten, the number with the greater power of ten is the greater number.

2) If the powers of ten are the same, compare the values between one and ten (coefficients)

** If the exponents are negative, the smaller exponent is the larger number

II Examples: Compare the following

1) 2.7×10^{13}_____ 2.7×10^{7}

2) 3.98×10^{22}_____ 2.52×10^{22}

3) 4.2×10^{7}_____ 4.2×10^{4}

4) 1.2×10^{7}_____ 1.4×10^{7}

5) 1.1×10^{7}_____ 3.3×10^{8}

6) 8.2×10^{-2}_____ 3.2×10^{-2}

7) 4.5×10^{-3}_____5.6×10^{-5}

8) 2.3×10^{-8}_____3.1×10^{-6}

9) 8.8×10^{2}_____890

10) 9.8×10^{9}_____ 9.9×10^{9}

11) 1.2×10^{7}_____6,800,000

12) 5.2×10^{-2}_____5.2×10^{-2}

Put the numbers in order from least to greatest

1) 4.63×10^{4}, 7.2×10^{-3}, 8×10^{-4}, 2.53×10^{5}

2) 5.6×10^{3}, 4.2×10^{5}, 5.6×10^{-2}, 6.3×10^{3}

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Comparing Numbers in Scientific Notation

The approximate weight of a whale shark is 4×10^4 pounds. The approximate weight of a common dolphin is 2×10^2 pounds. How many times as great as the weight of the whale shark is the weight of the dolphin?

First: Compare the values between 1 and 10

The *4* in 4×10^4 is _____ times as great as the *2* in 2×10^2

Next: Compare the powers of 10

10^4 is _____ times as great as 10^2

Circle: The most reasonable answer

The weight if the whale shark is *2/20/200/2,000* times as great as the weight of the dolphin

More Examples:

1) 8×10^5 is how many times as great as 4×10^2? *2/20/200/2,000* times?

2) 9×10^{10} is how many times as great as 3×10^7? *30/300/3,000/30,000* times?

3) 4×10^{-5} is how many times as great as 2×10^{-4}? *0.02/0.2/2/20* times?

4) 4×10^{-12} is how many times as great as 4×10^{-8}? *0.00001/0.0001/10/1000* times?