



Student Worksheet #2 Exponents

Complete the following:

1. The average number of stars (10 billion galaxies with an average of 100 billion stars) equals 1 billion trillion or

1 000 000 000 000 000 000 000 or

$1 \times 10 \times 10 \times$ _____

or 1×10^{22}

2. Mass of the Sun is 1 988 000 000 000 000 000 000 000 000 kg or

$1\,988 \times 10 \times 10 \times 10$ _____ kg

or

1988×10^{27} kg or $1,0988 \times 10^{30}$ kg

3. A group of researchers at the University of Hawaii estimated the number of grains of sand on earth is roughly seven quintillion, five hundred quadrillion or 7 500 000 000 000 000 or

$75 \times 10 \times$ _____

or 75×10^{15} or 7.5×10^{16}

4. Retroviruses such as the *Rous sarcoma* virus have an average diameter of .00000008 meters or

$8 \times 1/10 \times 1/10 \times 1/10 \times$ _____ meters

or 8×10^{-8} meters

5. The world's smallest fish *Paedocypris progenetica* from Indonesia has mature females measuring .0079 meters or $79 \times 1/10 \times$ _____ meters

or 79×10^{-3} meters or 7.9×10^{-2} meters

6. The estimated size of a water molecule is .0000000001 meters or

$1 \times 1/10 \times 1/10 \times$ _____ meters

or 1×10^{-10} meters.

7. The average size of a gold nanoparticle is 20 nanometers or

$20 \times 1/10 \times 1/10$ _____ meters

or 1×10^{-8} meters.

