**Simulation Lab – The Dozen**

**Press Release!**

Scientists have, through countless hours of research and experimentation, derived a remarkable new constant: the dozen. This number was derived to represent a specific number of particles. Study the exciting, highlighted conclusion in the box below:

**1 dozen = 12 particles**

It is expected to be the breakthrough discovery that will change life and laws if chemistry and physics, as we know them, forever!

**Your Task**

As with any new scientific discovery, this one must be exposed to the rigorous testing of the scientific community. Can this constant withstand such scrutiny?

1. Use the balances to complete the following calculations.

1 dozen of nails = pieces of nails

= g

Therefore, one dozen nails has a mass of g/dozen.

1 dozen of washers = pieces of washers

= g

Therefore, one dozen washers has a mass of g/dozen.

1 dozen of paperclips = pieces of paperclips

= g

Therefore, one dozen paperclips has a mass of g/dozen.

1. Use your calculations from question 1 to complete the table below. The scientific community – no, the world! – Thanks you. I thank you.

|  |  |  |  |
| --- | --- | --- | --- |
| **Substance** | **No. of dozens** | **Mass** | **No. of Particles** |
| Nails | 2 dozen |  |  |
|  |  | 62 |
|  |  | 4 |
| 7.5 dozen |  |  |
| Washers | 22 dozen |  |  |
| 5 dozen |  |  |
|  |  | 210 |
|  |  | 1.3 x 103 |
| Paperclips | 0.4 dozen |  |  |
|  |  | 6.0 x 106 |
|  |  | 75 |
| 12 dozen |  |  |

1. How many dozens are present in each of the following quantities? Show your calculations.
   1. 300 g of nails
   2. 600 g of washers
   3. 1 kg of paperclips