Physics 11

**Unit 2 – 1D Kinematics**

**Section 2.1: Vectors and Scalars**

* Scalars are quantities that have only \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (and units).  
  They are represented by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  + E.g.
* Vectors are quantities that have both \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (and units).  
  They are represented by a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, or by an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  + E.g.

**Adding Numbers:**

* Adding numbers is easy. The basic rules are:
  + We can put them in any \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  + Each time we add a new number, we \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  + The answer (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) is counted from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
    - E.g. 3 + (-2) + 1 vs. 1 + (-2) + 3



**0**

**Adding Vectors:**

* We use the same three rules for adding vectors:
  + We can put them in any \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  + Each time we add a new vector, we \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  + The answer (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) goes from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
    - 5 m/s right + 3 m/s up + 4 m/s down

**Distance vs. Displacement:**

|  |  |  |
| --- | --- | --- |
|  | Vector or Scalar? | Description |
| Distance |  | How far something traveled ***along the path it took.*** |
| Displacement |  | * Change in position. * Straight arrow from start to finish. |