**DISTANCE, DISPLACMENT, SPEED and VELOCITY WORKSHEET**

**To Calculate Distance**: always ADD all the numbers together REGARDLESS of directions. Distance DOES NOT have directions.

**To Calculate Displacement**: always ADD if it’s the same direction and keep the direction of the larger number. Example – North – North, South – South, East – East, West – West: You must ADD.

Always SUBTRACT if it’s different direction and keep the direction of the larger number. Example – North – South, East – West, South – North, West – East: You must SUBTRACT

**To Calculate Speed**: always calculate DISTANCE and then divide it by TIME. Remember Speed is SCALAR, so there is NO direction. You must always include appropriate units like km/hr, miles/hr, m/hr, km/min, km/s, m/s depending on the units of Distance and Time you are dividing.

**To Calculate Velocity:** always calculate DISPLACEMENT and then divide it by TIME. Remember Velocity is VECTOR, so there is (YES) direction. You must always include appropriate units like km/hr, miles/hr, m/hr, km/min, km/s, m/s depending on the units of Distance and Time you are dividing. Include DIRECTION for Velocity.

**SPEED = Distance divided by time = DISTANCE / TIME**

**VELOCITY = Displacement divided by time = DISPLACEMENT / TIME**

Now Test your skills with this Table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Information** | **Distance** | **Displacement** | **Speed** | **Velocity** |
| 200km N,  300km N, 2hours | 500km | 500km N | 250km/hr | 250km/hr N |
| 200km N,  300km S, 2hours | 500km | 100km S | 250km/hr | 50km/hr S |
| 350km N,  350km N, 2hours | 700km |  |  |  |
| 350km N,  350km S, 2hours |  | 0 |  |  |
| 550m N,  300m S, 2hours |  |  | 425m/hr |  |
| 200km S,  300km S, 5hours |  |  |  | 100km/hr S |
| 425km N,  275 km S, 5hours |  | 150km N |  |  |
| 120miles N,  30miles S, 2hours | 150miles |  |  |  |