**SC20F Physics Review Assignment Name:**

1. What is the difference between a scalar and a vector?
2. The following table shows the initial position of 3 different people. Calculate the displacement for each person. (remember to include direction!!!)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Pedestrian** | **Cyclist** | **Driver** |
| **Initial Position (d1)** | +3m | -5m | +10m |
| **Final Position (d2)** | +4m | 0m | -2m |

* 1. Pedestrian
	2. Cyclist
	3. Driver
1. Brooke is at a friend’s house 500m west from home. She rides her bike to the store 700m west from home in 2 minutes. Determine Brooke’s velocity as she rides to the store. (remember to convert your time units!!!)
2. When Faith goes for a jog, her average speed is 1.4m/s. If she jogs for 20min south, how far did she go?
3. Kale is on a plane heading south for a holiday. His plane is accelerating down the runway. It started at 0km/hr and accelerates to a final velocity of 270km/hr in 32s. Calculate the acceleration of the airplane (in m/s2)
4. Determine the velocity of a car using the graph below:
5. State Newton’s first law
6. What force is needed to accelerate an overhead cart at 0.5m/s2 if it has a mass of 9.7Kg?
7. Identify two pairs of equal and opposite forces in the following diagram:



1. What is the momentum of a 0.5Kg baseball thrown at 30m/s
2. Identify two safety devices installed in cars that will reduce the force on the passengers during the second collision in a car crash.