# Part 1- Constant Velocity

## Diagram:

X1 X2 X3 X4

## Data Table:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| x | t1(s) | t2(s) | t3(s) | tavg | v |
| 1m | 3.07 | 2.89 | 3.05 | 3.00 | 3.00 |
| 2m | 6.16 | 6.03 | 5.86 | 6.02 | 3.01 |
| 3m | 8.93 | 11.29 | 9.73 | 8.65 | 2.88 |

## Calculations

# Part 2- Constant Acceleration

## Diagram:



X1  X2 X3  X4

## Data Table:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| x | t1(s) | t2(s) | t3(s) | tavg(sec) | vavg(cm/s) | aavg(cm/s2) |
| 17 cm | 0.37 | 0.46 | 0.48 | 0.44 | 38.64 | 87.82 |
| 37 cm | 0.69 | 0.76 | 0.86 | 0.77 | 48.05 | 62.40 |
| 57cm | 0.92 | 1.01 | 1.05 | 0.99 | 57.58 | 58.16 |
| 77cm | 1.1 | 1.22 | 1.24 | 1.19 | 64.71 | 54.38 |

## Properly Scaled Data Table:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| x | t1(s) | t2(s) | t3(s) | tavg(sec) | vavg(cm/s) | aavg(cm/s2) |
| 20 | 0.32 | 0.3 | 0.38 | 0.33 |  |  |
| 40 | 0.55 | 0.55 | 0.57 | 0.55 |  |  |
| 60 | 0.73 | 0.76 | 0.76 | 0.75 |  |  |

## Calculations