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| --- | --- | --- | --- | --- | --- |
| **Distance, d** (metres) | **Uncertainty in distance, d** (metres) | **Time, t** (seconds) | **Uncertainty in time,t** (seconds) |  |  |
| 0 | 0 | 0 |  |  |  |
| 0.01 | 0.003 | 0.0462 | 0.05 |  |  |
| 0.02 | 0.0035 | 0.0652 | 0.05 |  |  |
| 0.03 | 0.004 | 0.0799 | 0.05 |  |  |
| 0.04 | 0.0045 | 0.0923 | 0.05 |  |  |
| 0.05 | 0.005 | 0.1031 | 0.05 |  |  |
| 0.06 | 0.0055 | 0.1130 | 0.05 |  |  |
| 0.07 | 0.006 | 0.1220 | 0.05 |  |  |
| 0.08 | 0.0065 | 0.1305 | 0.05 |  |  |

**Homework Task – Year 10 Physchem – Physics Unit.**

**The following data was obtained from an experiment into the motion of an electric vehicle.**

**Tasks: given the data above, and that** $v=\frac{d}{t} $**,** $a= \frac{v-u}{t}$ **,** $d=ut+ \frac{1}{2}at^{2}$**, and** $v^{2}=u^{2}+2ad$

1. **Identify the type of mathematical relationship which exists between distance and time,**
2. **Graph a distance versus time graph which would be linear**
3. **Determine the slope of the line of best fit, and identify the significance of this value.**
4. **Determine the uncertainty in this value determined in (c).**

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