Vector Analysis

Peter Keller, Dlyan Markley, Juddo Abakeer

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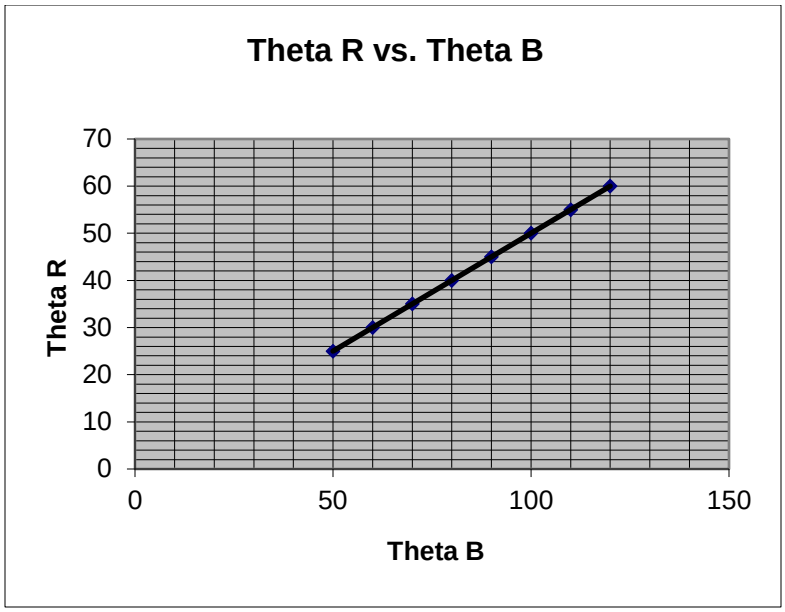
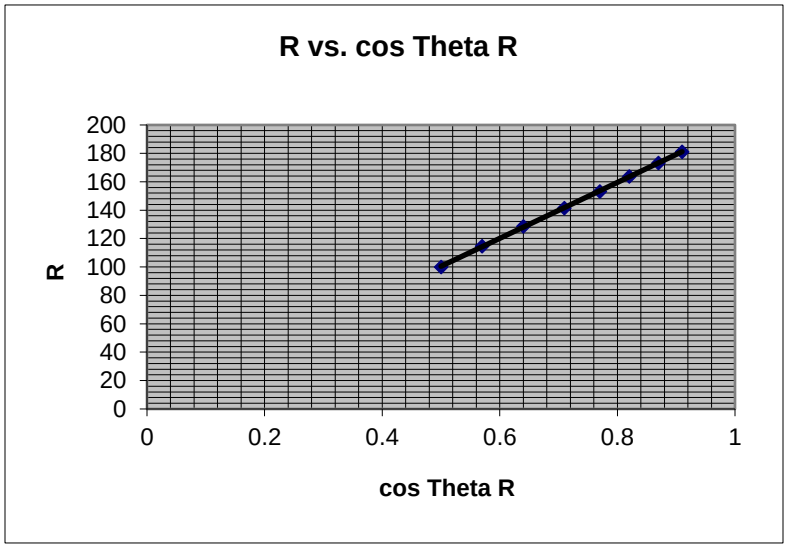
In the experiment Vector analysis the objective is to add vectors and to show that there are different ways of finding this vector addition.

The physics that is used to add vectors is as follows: first break the vectors down into their X and Y components, then proceed to add those different vector components together (for example add the X components together and the Y components together), After this square the sum of the X components and square the sum of the Y components, then take the square root of the sum of the X and Y components, this will produce the magnitude of all the vectors added together. To find the degree of the new vector take the inverse of tangent of all the Y components added together divided by all the X components added together.

| Vector Analysis Lab | | | |
|---|---|---|---|
| ΘB | ΘR | cos ΘR | R |
| 50 | 25 | 0.91 | 181.26 |
| 60 | 30 | 0.87 | 173.2 |
| 70 | 35 | 0.82 | 163.85 |
| 80 | 40 | 0.77 | 153.2 |
| 90 | 45 | 0.71 | 141.42 |
| 100 | 50 | 0.64 | 128.56 |
| 110 | 55 | 0.57 | 114.74 |
| 120 | 60 | 0.5 | 100 |




From this experiment we learned that adding vectors mathematically is equal to adding vectors in real life. The experiment should that math can be used to find real world answers instead of going outside and actually measuring all these vectors (which would be extremely time consuming).