**Catching the Perfect SAR Waves: Mathematical Model**

**ANSWER KEY**

**Instructions: Use the table and graph provided to record your results when calibrating your radar system. Represent the distance as a function of voltage. It is recommended that you verify your voltage output more than once to ensure accurate readings. Readings from sensor to sensor may vary slightly.**

**Radar Position: Horizontal**



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| --- | --- |
| ***Distance (cm)*** | ***Voltage******(V)*** |
| **20** | **2.40** |
| **30** | **1.90** |
| **40** | **1.45** |
| **50** | **1.15** |
| **60** | **0.98** |
| **70** | **0.86** |
| **80** | **0.79** |
| **90** | **0.75** |
| **100** | **0.73** |
| **110** | **0.75** |
| **120** | **0.75** |
| **130** | **0.77** |
| **140** | **0.78** |
| **150** | **0.79** |
|  |  |
|  |  |

**Radar Position: Vertical**



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|  |  |
| --- | --- |
| ***Distance (cm)*** | ***Voltage******(V)*** |
| **20** | **2.37** |
| **30** | **1.85** |
| **40** | **1.62** |
| **50** | **1.43** |
| **60** | **1.02** |
| **70** | **0.81** |
| **80** | **0.66** |
| **90** | **0.54** |
| **100** | **0.45** |
| **110** | **0.40** |
| **120** | **0.39** |
| **130** | **0.41** |
| **140** | **0.43** |
| **150** | **0.47** |
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