**Harold’s GUESS Method**

**Cheat Sheet**

22 September 2025

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **How to Solve Physics Word Problems** | | | | | |
| **Modified GUESS Method** | | 1. Read 2. Diagram 3. **G**ivens 4. Observations 5. **U**nknowns | 1. **E**quations 2. **S**olve 3. **S**ubstitute 4. Double-Check | | Drum Major Silhouette Stock Illustrations – 48 Drum Major Silhouette Stock  Illustrations, Vectors & Clipart - Dreamstime |
| **Scenario**  A marching band cadet marches on a football field.  First, he marches 10 yards East, then 40 feet North.  What is the shortest distance he must march to return to where he started? | | | | |
| **#** | **Step** | | | **Example** | |
| Person Reading Icon Vector Art, Icons, and Graphics for Free Download | 1. Carefully **read** the problem.  Translate each word of each sentence into math. | | | Reread the problem several times to make sure you did not miss anything. | |
| Cone Clip Art at Clker.com - vector clip art online, royalty free & public  domain | 2. Draw a **diagram**.  Clearly label everything. | | | **a**  **b**  **c**  **N** | |
| **G** | 3. Write down the **givens** as variables with units.  What information did they provide?  Are any of them extraneous? | | | a = 10 yards East  b = 40 feet North | |
| image of Unicode Character 'EYE' (U+1F441) | 4. Calculate **observations** or easily derived information.  Don’t forget unit conversions for consistency. | | |  | |
| **U** | 5. Write down the **unknowns**.  What are they asking for? | | | The shortest distance is a straight line, or the hypotenuse. ‘’.  = \_\_\_\_?\_\_\_\_ <units> | |
| **E** | 6. Recall relevant **equations** and formulas. | | | Since the path marched is a right triangle, we can use the Pythagorean Theorem: | |
| **S** | 7. **Solve** symbolically for the unknown variable.  Reduce algebraically to the simplest form.  Do not substitute until fully solved. | | |  | |
| **S** | 8. **Substitute** the givens into the solved formula.  Use a calculator as needed to calculate the answer. | | | = 30 feet  = 40 feet | |
| **✓✓** | 9. **Double-check** your work.  Ask yourself if the answer is reasonable and makes  sense. Don’t forget the units. Box in your answer. | | | The shortest distance the cadet must march is 50 feet. | |

See also: [GUESS Method](https://physics-network.org/what-is-the-guess-method-for-problem-solving/) for problem-solving.