Using the GRASS Method to Solve Problems

ROSEDALE ACADEMY

What is the GRASS method?

- The GRASS method is an organizational tool that allows students to solve problems in an organized and logical way.

Why Use the GRASS Method?

- The GRASS method is useful for both students and teachers.
- For students, using the GRASS method gives students a set of guidelines that helps:
  - organize their solutions
  - uncover the relevant information in a problem
  - find the ultimate goal of the problem
  - guide students to the proper tools (equations) to use in solving the problem
- The GRASS method also allows students to clearly demonstrate their understanding of the concepts being assessed.

Why Use the GRASS Method?

- For teachers, the GRASS method has several benefits:
  - makes sure that all students are presenting their solutions in a uniform format.
  - allows teachers to see the thought process that students are using to solve problems.
  - allows teachers to identify areas where students may be struggling or may need additional support.

Using the GRASS Method

Given - identify the information GIVEN in the problem.

Required – identify the information REQUIRED (what are you trying to determine).

Analyze – ANALYZE (figure out) which equation, rule or principle applies to this type of problem.

Solve – if using an equation, substitute the values given in the problem and SOLVE the equation.

Statement – rewrite your answer as a STATEMENT using a brief sentence that clearly answers the problem.

How to Use the GRASS Method

When iron is exposed to air, it corrodes to form red-brown rust. Rust is iron (III) oxide (Fe_2O_3). How many moles of iron (III) oxide are contained in 92.2g of pure Fe_2O_3? Round your final answer to three significant digits.

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Solve

Statement

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M $Fe_2O_3 = ?$ g/mol

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Analyze:

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Solve:

$$M\ Fe_2O_3 = 2(55.8g/mol) + 3(16g/mol)$$
$$= 159.6\ g/mol$$

$$n = \frac{m}{M}$$

$$n = \frac{92.2g}{159.6g/mol}$$

$n = 0.577769$ mol $Fe_2O_3 = 0.578$ mol round to 3 significant digits

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Statement:

Therefore, there are 0.578 moles of iron (III) oxide contained in 92.2g of pure Fe_2O_3.