Below is a secret message. Each mathematical symbol and number combination (e.g. x3) can translate to a letter. You will use **FREQUENCY ANALYSIS** to crack the code. Count the number of times each symbol/number appears in the message using the grid below. Then follow the instructions on the following pages.

Here is an enciphered message found in a suspected spy's apartment. We believe it can tell us about a secret meeting somewhere in Washington, DC. Use the following pages to help you crack the code!

\[
\begin{array}{ccccccc}
\text{x3} & -5 & -5 & +1 & \text{x3} & -5 & -1 & +1 & +1 \div 3 & -5 \\
\text{x2} & \div 2 & \text{x4} & -3 & \text{x5} & \text{x2} & \text{x4} \\
\text{x3} & -5 & \text{x3} & \text{x5} & +3 \div 2 & -1 & \text{x2} \\
\end{array}
\]

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<th>x3</th>
<th>-5</th>
<th>+1</th>
<th>-1</th>
<th>\div 3</th>
<th>x2</th>
<th>\div 2</th>
<th>x4</th>
<th>-3</th>
<th>x5</th>
<th>+3</th>
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**DESTROY THIS ❗️ AFTER READING**
We are assuming this message will decode into English—that means that each math symbol with a number will translate to a letter of the alphabet and each space between the symbols indicates a new word. You will use Frequency Analysis to crack this message. Here's How:

**Step 1:**
Use the grid beneath the message to count how many times each symbol/number combination appears in the message (it’s frequency).

**Step 2:**
Look at your totals, which combination appears most? Consult page three to see which letter(s) in the English language appear most frequently.

**Step 3:**
Use a pencil (you may need to erase) and try placing the most frequently used letter (E) under the most frequently appearing symbol.

**Step 4:**
Now look at the patterns in the English language on page 3 and begin trying out letters until a word forms.

**Step 5:**
Once you think you have a word, Go through the message and replace those same symbols with those same letters and try to solve this message.

**Step 6:**
Don't get frustrated! Just keep trying different combinations.

**HINT:** We believe the message is about a secret meeting taking place somewhere in Washington, DC. Check the next page for the answer.
E is the most common letter used in words. Other common letters:
T, A, O, N, I, R, S, H

Least commonly used letters:
J, K, Q, X, Z

Common double letter combinations:
EE, OO, LL, TT, SS

Some common two-letter combinations:
EN, RE, ER, TH

The only one-letter words:
A & I

More about the letter A:
Often found at the beginning of the words and second from the last letter

More about the letter I:
Often found third from the last letter of a word (think...ing)

Commonly used words:
The, That, And, Will, A, I, Is, It, In