ABC's and 123's REVISITED

The Mathematical Challenge:

The project is a reincarnation of your beloved ABC's and 123's project from the start of the year. The objective of this challenge is to demonstrate your skills with ABC's and 123's as applied to inequalities. The requirements are as follows:

- All the letters of the alphabet (a-z) must be used as variables.
- Each variable must correspond with the letter's numerical value. For example: the letter a corresponds to 1, b to 2, c to 3 … z to 26.
- Instead of equals signs, for this project you will be using inequalities. For example: a < 1, b > 2, c < 3 … z $\geq$ 26.
- An inequality must be used to express the value of each variable. For example: -4c < -21 shows that c > 3.
- The various forms of inequality equations to be used are as follows:

  Note: Since there are four inequalities (<, >, $\leq$, and $\geq$) and you can choose any of them for your equation, $\square$ will be used to represent a general inequality.

  - Variable +/- constant = constant (Ex. z – 14 < 12)
  - (Coefficient) • (Variable) $\square$ constant (Ex. 3z $\geq$ 78)
  - (Coefficient) • (Variable) +/- constant $\square$ constant (Ex. 2z + 2 > 54)
  - (Variable) ÷ (Coefficient) $\square$ constant (Ex. z ÷ 13 < 2)
  - (Variable) ÷ (Coefficient) +/- constant $\square$ constant (Ex. z ÷ 2 - 21 > -8)

- The five different inequality equation forms should be used equally. There are 26 equations; so one inequality equation will be used once more than the other four.
- The four inequalities (<, >, $\leq$, and $\geq$) should be used equally. There are 26 equations; so two inequalities will be used once more than the other two.
- At least half the constants used must be negative in value.
- At least half the coefficients used must be negative in value.
- Record your variable, variable value, and inequality equation in the table provided. This is where the instructor will actually grade your project for correctness. The design will only be assessed for creativity and neatness.
- Make sure to use the rubric provided as a guideline for success.

The Artistic Component:

Use the colored paper and provided supplies to create a poster, project, or design that shows your knowledge of inequalities and your ABC's and 123's. Include the variable and inequality equation in the project. Be creative and make sure your design is **<u>ORIGINAL</u>**.

Record the required information below:

Variable	Variable Value	Inequality Equation	Check

Grading Rubric: Your grade will be determined by the following point scheme:

	Accuracy	Inequality Equations	Signs	Inequalities	Neatness	Creativity
4 Points	24-26 correct and ABC's and 123's fully correspond	All inequality equation forms were used equally	Coefficient and constant signs were equally distributed	All inequalities were used equally	Project is neat, organized and aesthetically pleasing	Highly creative and original design
3 Points	18-23 correct and ABC's and 123's mostly correspond	All inequality equation forms were used	Coefficient and constant signs were mostly distributed equally	All inequalities were used	Partially lacking in organization, neatness and/or aesthetics	Partially lacking creativity or originality
2 Points	12-17 correct and ABC's and 123's partially correspond	Most of the inequality equation forms were used	Coefficient and constant signs were not equally distributed	Most inequalities were used	Mostly lacking in organization, neatness and/or aesthetics	Partially lacking creativity and originality
1 Point	Less than 12 correct and ABC's and 123's do not correspond	Some of the inequality equation forms were used	Only positive coefficients and constants were used	Some inequalities were used	Messy and unpleasing to the eye	Totally lacking creativity and originality

Self-Assessment:

Please self score your project based on the rubric above. Record you scores in the space provided below. Failing to complete the self-assessment will result in a 2-point reduction in the project's overall grade.

	Accuracy	Inequality Equations	Signs	Inequalities	Neatness	Creativity	Total Score
Self Score (1-4)							/24

Matching the instructor's grade will add an additional 1 point to your overall grade. Over scoring yourself by 4 points will reduce your point total by one, so score yourself accurately!!!

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