

George Washington Carver  
High School of Engineering and Science  
2019 Summer Enrichment

**ALGEBRA II**

*If you are taking BOTH Geometry AND Algebra II in the fall of 2019, you will only need to complete the Geometry summer project this year.*

**Due Wednesday September 11<sup>th</sup>**

**Student Name:** \_\_\_\_\_ **Advisory #:** \_\_\_\_\_

**This project will be scored out of 100 points . THIS RUBRIC MUST BE ATTACHED TO YOUR PROJECT.**

<b>Guidelines</b>	<b>Self-check</b>	<b>Points Earned</b>	<b>Points Available</b>
<b>Part I</b> For each of the 4 problems: - Work is shown (2 each) - Equation is correct (2 each) - Equation is in the correct form (1 each)			<b>20</b>
<b>Part II</b> X and Y axis are numbered and scaled (5) X and Y axis are labeled properly (5) Graph has a proper title (2) All points graphed correctly (8) Lines of best fit are shown (5) Data sets A, B, and C are labeled distinctly (5)			<b>30</b>
<b>Part III</b> Description of calculator steps (10) Equation for each data set (5 each)			<b>25</b>
<b>Part IV</b> Description of Correlation (5 points) Graphing of each point (1 each) Sentence about each person (3 each)			<b>25</b>
<b>TOTAL</b>			<b>100</b>

**NOTE: ONE FULL LETTER GRADE (10 points) will be deducted for each day of lateness.**

\_\_\_\_\_  
**Teacher Use Only**

**Date Received:** \_\_\_\_\_ **Teacher Signature:** \_\_\_\_\_

**Feedback:**

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**Part I: Demonstrating Knowledge of Slope and Linear Equations**

Given the information in each problem, write the equation for the line described. Show your work and write your final answer in the box provided.

- A. Slope intercept form for a line passing through the points (3, 4) and (7, 0).

- B. Standard form for a line parallel to the line  $y = 5x - 12$  and passing through the point (-2, -6).

- C. Slope intercept form for a line perpendicular to the line  $3x + 4y = 6$  and passing through the point (9, 2).

- D. A line parallel to the line the line  $2x - 5y = 0$  and with a x-intercept of 6.

## Part II: Graphing Data by Plotting Points

Tables A, B, and C are based on the U.S. Army Height/Weight Guidelines. All height measurements are in inches and all weight measurements are in pounds.

Table A:  
Men/Women Minimum  
Weights for Height

Height (x)	Weight (y)
60	97
61	100
62	104
63	107
64	110
65	114
66	117
67	121
68	125
69	128
70	132
71	136
72	140
73	144
74	148

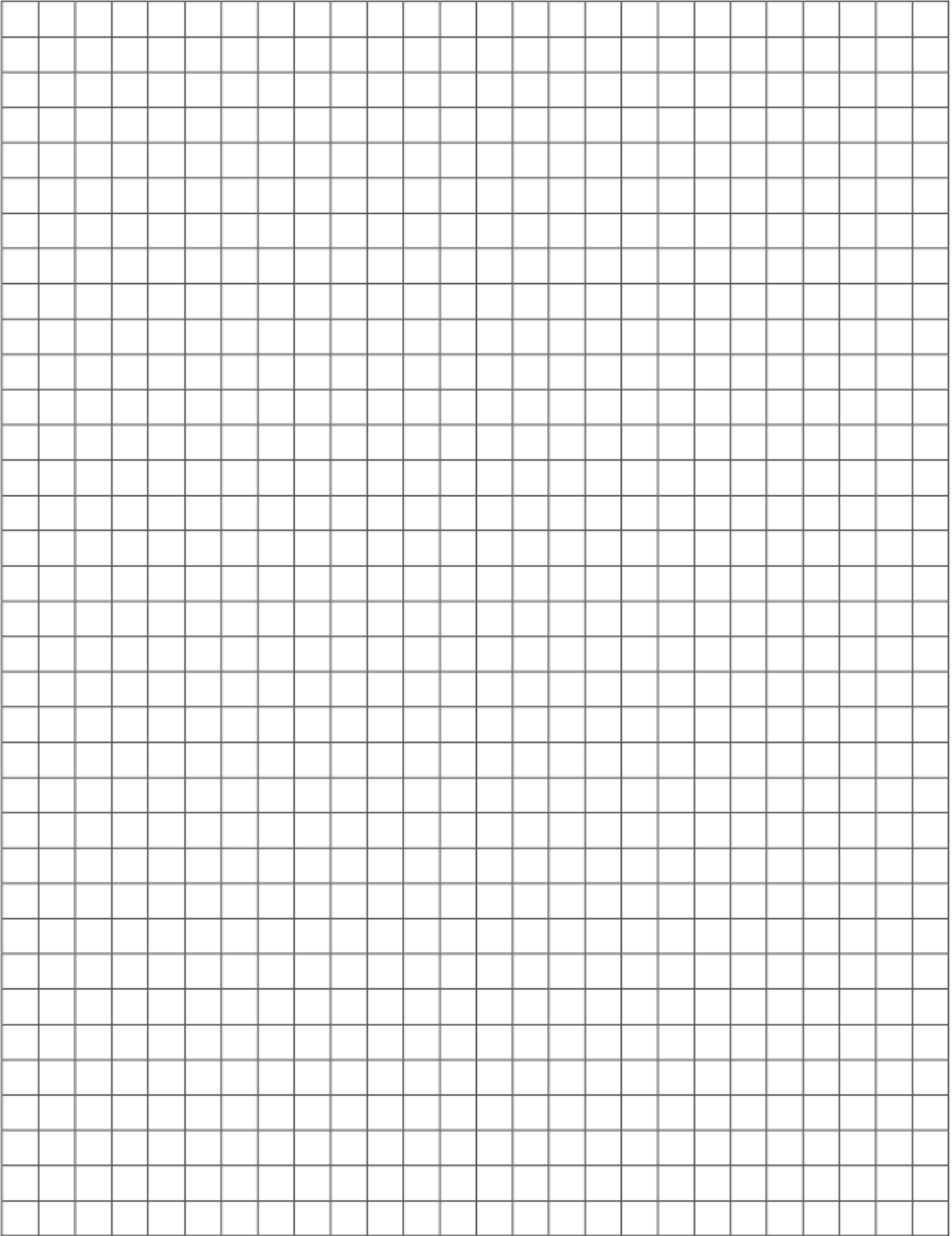
Table B:  
Men 's Maximum  
Weight for Height

Height (x)	Weight (y)
60	136
61	140
62	144
63	149
64	154
65	159
66	163
67	169
68	174
69	179
70	185
71	189
72	195
73	200
74	206

Table C:  
Women's Maximum  
Weight for Height

Height (x)	Weight (y)
60	129
61	134
62	138
63	143
64	147
65	152
66	156
67	161
68	166
69	171
70	176
71	181
72	186
73	191
74	197

On the grid on the next page, plot the data from all three tables on a single graph. Make sure to label and scale the axes. Plot the points from each table in a different color. (i.e. Table A= red, Table B = blue, and Table C = black) and include a sketched line of best fit.



**Part III: Equations for Lines of Best Fit**

Describe the series of steps that you use to enter the data into your calculator and find the line of best fit. Then, for each set of data, use your graphing calculator to find the equation for the line of best fit. Write all four equations in slope-intercept form in the appropriate spaces below. (HINT: Use the STAT menu on your calculator.)

Description of calculator steps: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Data Set A (minimum weights) Equation: \_\_\_\_\_

Data Set B: (maximum weights-men) Equation: \_\_\_\_\_

Data Set C: (maximum weights-women) Equation: \_\_\_\_\_

### **Part V: Analysis**

Answer the following questions about your data.

1. What type of correlation exists between height and weight?

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2. The data below shows information on 5 people. Plot and label a point for each person on your graph. Then, on the lines below, write a sentence about how that person compares to the Army guidelines.

Name	Gender	Age	Height (Inches)	Weight (Pounds)
Marta	Female	41	64	100
Natalie	Female	31	68	195
Oscar	Male	19	70	155
Paula	Female	37	62	111
Quincy	Male	40	72	190

Marta: \_\_\_\_\_

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Natalie: \_\_\_\_\_

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Oscar: \_\_\_\_\_

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Paula: \_\_\_\_\_

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Quincy: \_\_\_\_\_

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