

Name:

Date:

32345 Chestnutt Linear Relationship Project +

Create a design, on the graph paper with a white border, using only linear relationships. The design must be neat (all lines drawn with a ruler), easily readable, in color (fine marker, pencil or pen) and include at least one line of each of the following:

- * increasing with no direct variation
- * decreasing with no direct variation
- * constant y value
- * one pair of parallel lines
- * increasing with direct variation
- * decreasing with direct variation
- * constant x value
- * one pair of perpendicular lines

Color in the picture AFTER all the calculations have been completed.

- Your name is on every sheet of paper. Neatness counts!
- Label each line with the letter that corresponds to its equation that is on the worksheet. Record only the lines listed above. Extra lines do not need equations. Do not highlight the lines.
- All designated lines (lines labeled with letters) must be a meaningful part of your picture - not add-ons.
- Parallel lines and perpendicular lines must not be horizontal, vertical or have slopes of negative or positive one.
- You may only identify one horizontal and one vertical line and they may not be the x or y axis.
- Only one line may have a slope of one and only one line may have a slope of negative one for your equations and they cannot be the perpendicular lines.
- Only two lines may have the same slope for your equations.
- All line segments used for equations must begin and end on gridline intersections. Use the endpoints for calculating the slopes and equations of lines.
- The x and y axes must be labeled. X- and y-intercepts are written as ordered pairs.
- Complete the worksheets, then submit them and this sheet with the design. Do NOT staple them together.
- Your picture must have a title in correct title format.

Grading:	Following all directions carefully	10 pts
	Accurate equations and details	80 pts
	Creativity, complexity and uniqueness	0 - <u>10 pts</u>
	Total	100 pts

This is a test grade!!

Name: _____

Date: _____

A: Increasing w/ DV Equation:

Equation: _____

standard form: _____

slope: _____

y-intercept: _____

x-intercept: _____

domain: _____

range: _____

B: Increasing w/out DV Equation:

Equation: _____

standard form: _____

slope: _____

y-intercept: _____

x-intercept: _____

domain: _____

range: _____

C: Decreasing w/ DV Equation:

Equation: _____

standard form: _____

slope: _____

y-intercept: _____

x-intercept: _____

domain: _____

range: _____

D: Decreasing w/out DV Equation:

Equation: _____

standard form: _____

slope: _____

y-intercept: _____

x-intercept: _____

domain: _____

range: _____

E: Parallel Line Equation 1:

Equation: _____

standard form: _____

slope: _____

y-intercept: _____

x-intercept: _____

domain: _____

range: _____

inc., dec., constant or undefined

direct variation: yes or no

F: Parallel Line Equation 2:

Equation: _____

standard form: _____

slope: _____

y-intercept: _____

x-intercept: _____

domain: _____

range: _____

inc., dec., constant or undefined

direct variation: yes or no

Name: _____

Date: _____

G: Constant y value equation:

Equation: _____

standard form: _____

slope: _____

y-intercept: _____

x-intercept: _____

domain: _____

range: _____

inc., dec., constant or undefined

H: Constant x value equation:

Equation: _____

standard form: _____

slope: _____

y-intercept: _____

x-intercept: _____

domain: _____

range: _____

inc., dec., constant or undefined

J: Perpendicular line equation 1:

Equation: _____

standard form: _____

slope: _____

y-intercept: _____

x-intercept: _____

domain: _____

range: _____

inc., dec., constant or undefined

direct variation: yes or no

K: Perpendicular line equation 2:

Equation: _____

standard form: _____

slope: _____

y-intercept: _____

x-intercept: _____

domain: _____

range: _____

inc., dec., constant or undefined

direct variation: yes or no