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Enter the data from the table above into lists.

Press STAT ENTER. Enter the x column in L1 and the y column in L2 as shown.

X	У
1	24
2	12
3	8
4	6
5	4.8
6	4

Press 2nd [STAT PLOT] and select Plot1.

Press ENTER to turn the plot **On**. Select **scatter** as the type of plot, **L1** for the Xlist, and **L2** for the Ylist.

Press WINDOW. Set the window to the following:

Xmin = 0, Xmax = 10, Xscl = 2

Ymin = 0, Ymax = 25, Yscl = 5

NORMAL FLOAT DEC REAL DEGREE MP	Û
Plot1 Plot2 Plot3	
On Off	
Type: 🔤 🗠 🏊 🖭 🖭 🗠	
Xlist:L1	
Ylist: <u>L</u> 2	
Mark: 🗖 +	
Color: BLUE	

## Press GRAPH].

• How would you describe the relationship between x and y by examining this data?

Press STAT ENTER to return to the lists.

- What relationships can you see by examining the numbers in the lists?
- What is the product of each pair of numbers?

Arrow to the top of **L3**. Enter a formula to multiply the entries in **L1** by the entries in **L2**. Press 2nd [L1] for **L1** and press 2nd [L2] for **L2**.

NORMAL	FLOAT DE	C REAL	DEGREE 1	1P	0
L1	L2	Lз	L4	L5	3
1 2 3 4 5 6	24 12 8 6 4.8 4				
L3=L1*L2					



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Press ENTER to execute the formula. The product in each case is 24.

So,  $L1 \cdot L2 = 24$  or  $x \cdot y = 24$ . This relationship, when x and y have a constant product, is called "inverse variation."

• What type of situation might this be a formula for?

NORMAL	FLOAT DE	C REAL	DEGREE 1	1P	Ō
L1	L2	Lз	L4	L5	3
1 2 3 4 5 6	24 12 8 6 4.8 4	24 24 24 24 24 24 			
L3(1)=24					

Solve the equation  $x \cdot y = 24$  for y. Press Y=. Enter the equation into  $Y_1$ .

• What is your equation?

Press GRAPH).

- What other information can you find from the graph of the equation that you could not gather from the plot?
- Does this graph appear to be a function? Explain.

Press 2nd [TABLE] to examine the function table.

• What is happening when x = 0? Why?

Arrow up to the negative *x*-values in the table.

- What do you notice about the y-values?
- Why does this occur?
- What do you think the graph of your equation looks like to the left of the *y*-axis?

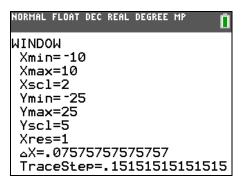


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Press <u>WINDOW</u>. Set the window as shown to examine the graph when *x* is negative.

Press GRAPH.

• What appears to be happening when x = 0?



• Why does the graph of the equation not appear in Quadrants II or IV?

• Do you think an inverse variation can ever be found in Quadrants II or IV? Why?

• Does this graph appear to be a function now? Explain.