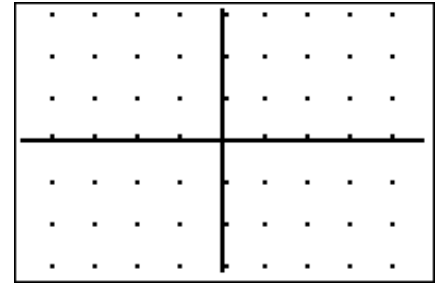


# Discovering the Effects of M

1. Enter the equation  $y = 2x$  in your graphing calculator.

Create a graph of this line in a Zoom 4:Decimal Window. Record the graph at the right.



Create a table that begins at  $x = 0$  and increases by 1. Record the table at the right. Describe what you notice about the change in the x values?

What do you notice about the change in the y values?

What is the ratio of the change of y to the change in x?

X		
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

X=0

Create a table that begins at x and increases by 2. Record the table at the right. Describe what you notice about the change in the x values?

What do you notice about the change in the y values?

What is the ratio of the change of y to the change in x?

X		
0		
2		
4		
6		
8		
10		
12		

X=0

Create a table that begins at x and increases by 3. Record the table at the right. Describe what you notice about the change in the x values?

What do you notice about the change in the y values?

What is the ratio of the change of y to the change in x?

X		
0		
3		
6		
9		
12		
15		
18		

X=0

Create a table that begins at x and increases by 0.5. Record the table at the right. Describe what you notice about the change in the x values?

What do you notice about the change in the y values?

What is the ratio of the change of y to the change in x?

X		
0		
0.5		
1		
1.5		
2		
2.5		
3		

X=0

You worked with the same equation for each table. What did you notice about the ratio of the change in y to the change in x?

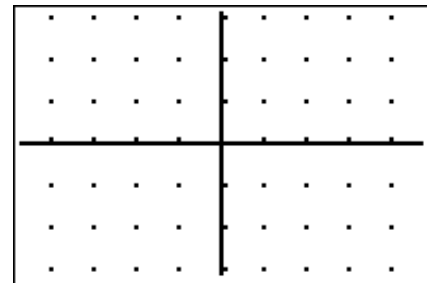
Try creating a different table by change the  $\Delta TBL$ . Calculate the change in y and the change in x for each table. What do you notice?

How is the ratio related to the equation you entered in the calculator?

2. Enter the equation  $y = 3x$  in your graphing calculator.

Create a graph of this line in a Zoom 4.Decimal Window. Record the graph at the right.

How is the graph different from problem 1?



Create a table that begins at  $x = 0$  and increases by 1. Record the table at the right. Describe what you notice about the change in the x values?

What do you notice about the change in the y values?

What is the ratio of the change of y to the change in x?

X		
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

X=0

Create a table that begins at x and increases by 2. Record the table at the right. Describe what you notice about the change in the x values?

What do you notice about the change in the y values?

What is the ratio of the change of y to the change in x?

X		
0		
2		
4		
6		
8		
10		
12		

X=0

Create a table that begins at x and increases by 3. Record the table at the right. Describe what you notice about the change in the x values?

What do you notice about the change in the y values?

What is the ratio of the change of y to the change in x?

X		
0		
3		
6		
9		
12		
15		
18		

X=0

Create a table that begins at x and increases by 0.5. Record the table at the right. Describe what you notice about the change in the x values?

What do you notice about the change in the y values?

What is the ratio of the change of y to the change in x?

X		
0		
0.5		
1		
1.5		
2		
2.5		
3		

X=0

You worked with the same equation for each table. What did you notice about the ratio of the change in y to the change in x?

Try creating a different table by change the  $\Delta TBL$ . Calculate the change in y and the change in x for each table. What do you notice?

How is the ratio related to the equation you entered in the calculator?

3. Enter the equation  $Y = \left(\frac{3}{2}\right)X$  in your graphing calculator.

Create a graph of this line in a Zoom 4.Decimal Window. Record the graph at the right.



How is the graph different from problem 1 and 2?

Create a table that begins at  $x = 0$  and increases by 1. Record the table at the right. Describe what you notice about the change in the  $x$  values?

What do you notice about the change in the  $y$  values?

What is the ratio of the change of  $y$  to the change in  $x$ ?

X		
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		

X=0

Create a table that begins at  $x$  and increases by 2. Record the table at the right. Describe what you notice about the change in the  $x$  values?

What do you notice about the change in the  $y$  values?

What is the ratio of the change of  $y$  to the change in  $x$ ?

X		
0		
2		
4		
6		
8		
10		
12		

X=0

Create a table that begins at  $x$  and increases by 3. Record the table at the right. Describe what you notice about the change in the  $x$  values?

What do you notice about the change in the  $y$  values?

What is the ratio of the change of  $y$  to the change in  $x$ ?

X		
0		
3		
6		
9		
12		
15		
18		

X=0

Create a table that begins at  $x$  and increases by 0.5. Record the table at the right. Describe what you notice about the change in the  $x$  values?

What do you notice about the change in the  $y$  values?

What is the ratio of the change of  $y$  to the change in  $x$ ?

X		
0		
0.5		
1		
1.5		
2		
2.5		
3		

X=0

You worked with the same equation for each table. What did you notice about the ratio of the change in  $y$  to the change in  $x$ ?

Try creating a different table by change the  $\Delta TBL$ . Calculate the change in  $y$  and the change in  $x$  for each table. What do you notice?

How is the ratio related to the equation you entered in the calculator?

4. Enter the equation  $y = -\left(\frac{1}{2}\right)x$  in your graphing calculator.

Create a graph of this line in a Zoom 4:Decimal Window. Record the graph at the right.

How is the graph different from problem 1, 2, and 3?



Create a table that begins at  $x = 0$  and increases by 1. Record the table at the right. Describe what you notice about the change in the x values?

What do you notice about the change in the y values?

What is the ratio of the change of y to the change in x?

X		
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

X=0

Create a table that begins at x and increases by 2. Record the table at the right. Describe what you notice about the change in the x values?

What do you notice about the change in the y values?

What is the ratio of the change of y to the change in x?

X		
0		
2		
4		
6		
8		
10		
12		

X=0

Create a table that begins at x and increases by 3. Record the table at the right. Describe what you notice about the change in the x values?

What do you notice about the change in the y values?

What is the ratio of the change of y to the change in x?

X		
0		
3		
6		
9		
12		
15		
18		

X=0

Create a table that begins at x and increases by 0.5. Record the table at the right. Describe what you notice about the change in the x values?

What do you notice about the change in the y values?

What is the ratio of the change of y to the change in x?

X		
0		
0.5		
1		
1.5		
2		
2.5		
3		

X=0

You worked with the same equation for each table. What did you notice about the ratio of the change in y to the change in x?

Try creating a different table by change the  $\Delta TBL$ . Calculate the change in y and the change in x for each table. What do you notice?

How is the ratio related to the equation you entered in the calculator?