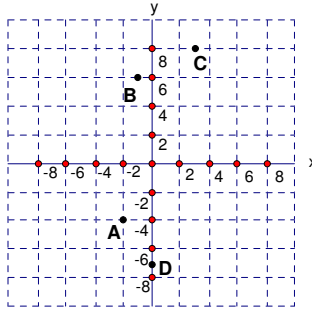


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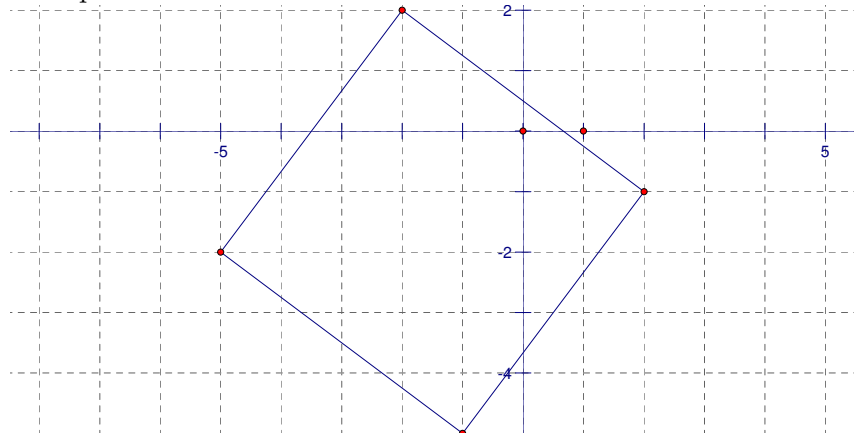
1. (a)  $x^6$  (b)  $x^5$  (c)  $x^2y^3$

2. See diagram below.



3.  $b, c$

4. Let's draw the picture.



Clearly, the shape is a  $\text{square}$ .

5. The table is completed as follows, by plugging in the numbers in the  $x$  row into the equation  $\frac{3}{2}x + 1$  and writing the answer in the boxes below the  $x$  values.

$x$	-3	-2	-1	0	1	2	3
$2x - 1$	-3.5	-2	-1.5	1	2.5	4	5.5

Now we must find the slope of this line. Here's the easy way: if you have an equation of the form  $y = mx + b$ , or *something*  $\times x + \text{another thing}$ , the slope is the number multiplied onto the  $x$ . So since our equation is  $\frac{3}{2}x + 1$ , the slope is the number multiplied onto the  $x$ , or  $\frac{3}{2}$ .

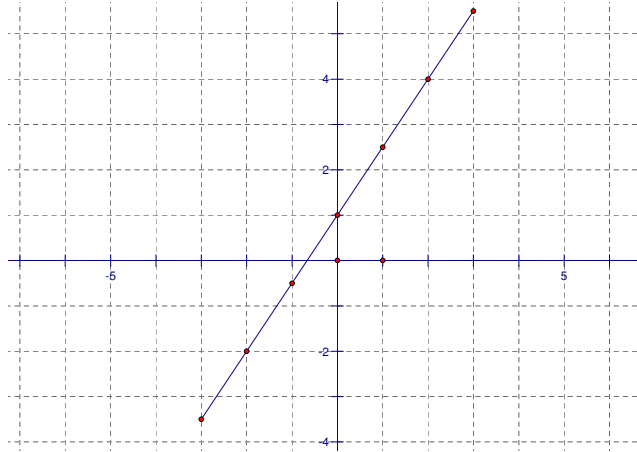
Here's the harder way: graphing it. Let's plot each of the points in the chart on a grid.



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Slope is  $\frac{\text{rise}}{\text{run}}$ . When the line moves from  $(0, 1)$  to  $(2, 4)$  it rises 3 units, and “runs” or moves right 2 units. So slope =  $\frac{\text{rise}}{\text{run}} = \frac{3}{2}$ .

6. If a car can cover 48 miles with 2.5 gallons of gas, it can go  $48 \div 2.5 = 19.2$  miles on one gallon.  $y = 19.2x$
7.  $y = 1.5x + 50$ . If he drives 87 miles, he must pay  $1.5x + 50 = 1.5 \times 87 + 50 = 130.50 + 50 =$   
 $\$180.50$
8. Plug in a few points for  $x$ . The chart shows the values of a few points of each line (note:  $f(x)$  and  $g(x)$  are the names of the different lines).

$x$	$f(x)$	$g(x)$
0	-3	5
1	-1	4.5
-1	-1	4.5
2	5	3
-2	5	3
3	15	.5
-3	15	.5

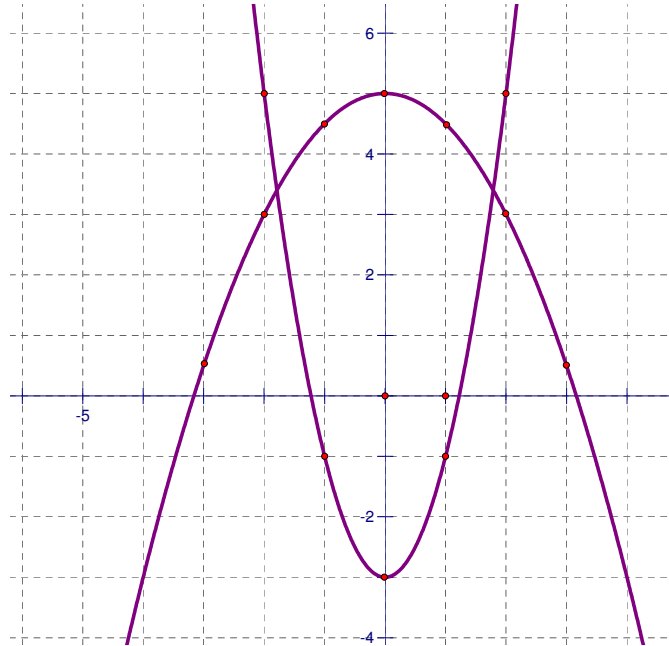
Now let's plot the points and connect them with a rounded line.



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9. We know perimeter is  $2(l + w)$ , where length is  $l$  and width is  $w$ . Since length is  $x$ , and perimeter is 60, we can solve for width in terms of  $x$ :  $P = 2(l + w) \Rightarrow 60 = 2(x + w) \Rightarrow 30 = x + w \Rightarrow \text{width} = 30 - x$ . Area, or  $y$  is  $\text{length} \times \text{width}$ , and we know length is  $x$  and width is  $30 - x$ , so  $y$  is their product, or  $y = x(30 - x)$