**MODULUS FUNCTION (or Absolute Value.)**

**– 2 +3**

-3 -2 -1 0 1 2 3 4

1. The symbol for **modulus** is 2 vertical lines: │ │

2. The LENGTH of **+3** is written as │+3│ = **3**

3. The LENGTH of **– 2** is written as │– 2│ = **2**

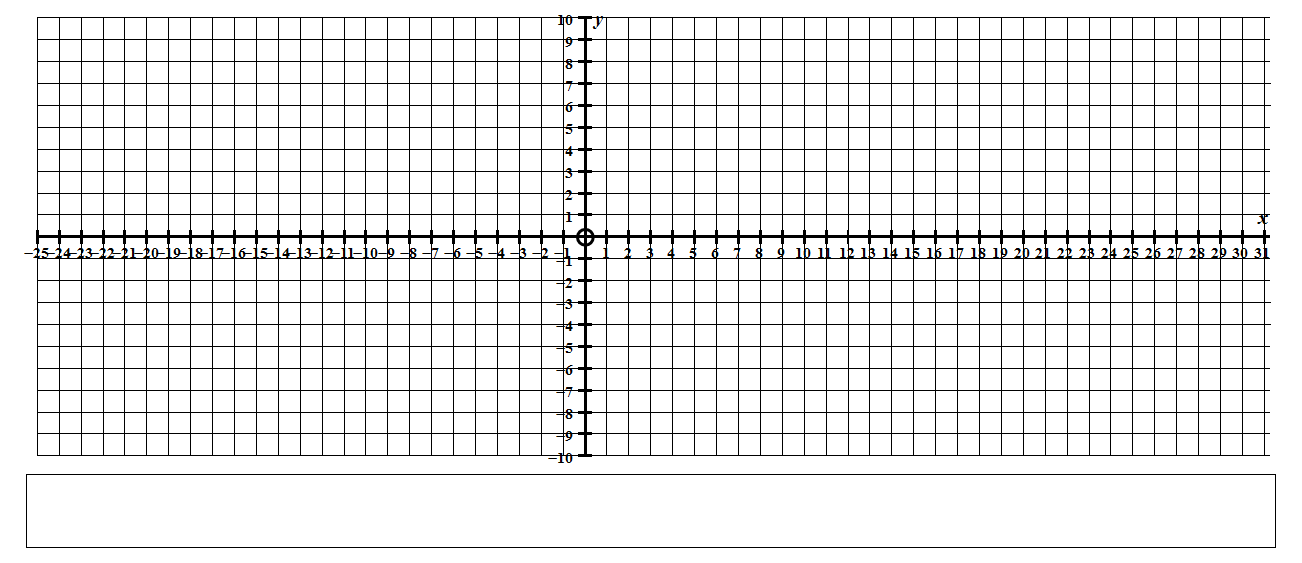
4. Basically │ 3 – 5 │ means “what is the length of – 2, which is 2.

5. │1 – 7 │ = 6 not – 6

6. Consider the equation ***y = │x│*** This is pronounced ***y = MOD x***

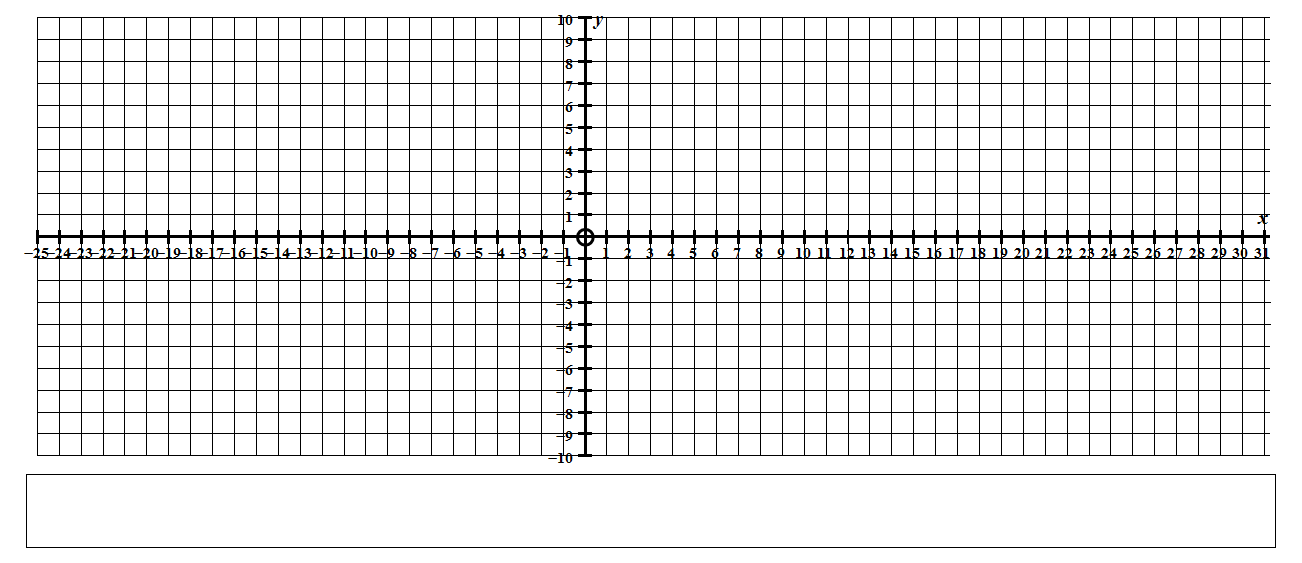
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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***x*** | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| ***y =│x│*** |  |  |  |  |  |  |  |  |  |

Draw the graph of ***y = │x│***



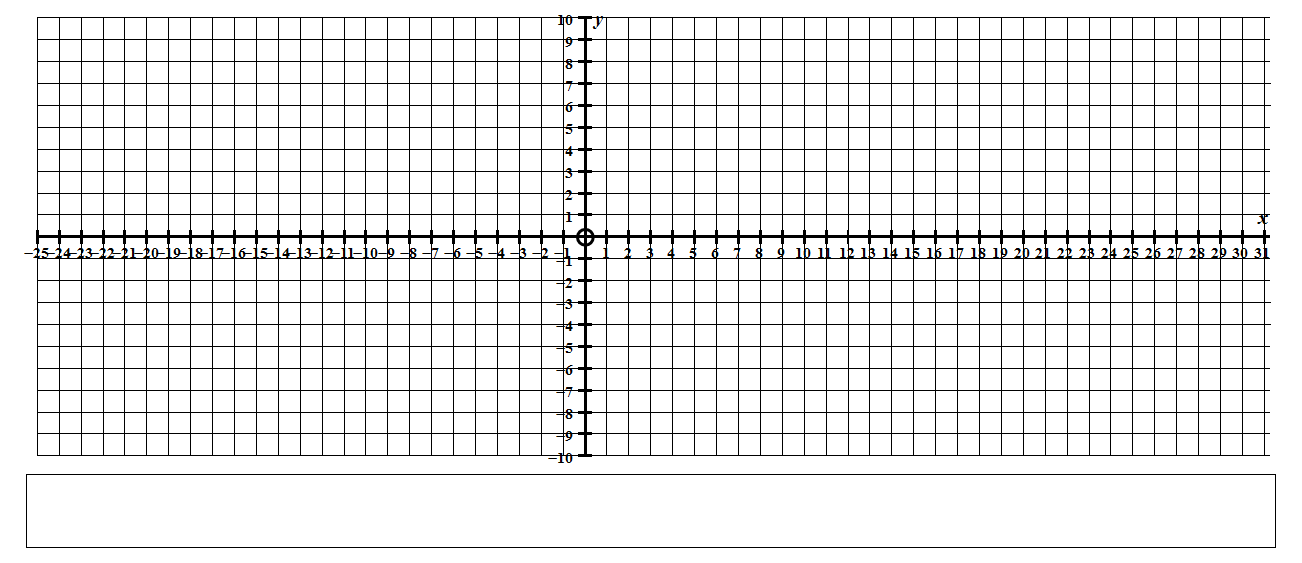
7. Calculate points on this graph the draw the graph. ***y = │ x – 4 │***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| x | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| y |  |  |  |  |  |  |  |  |



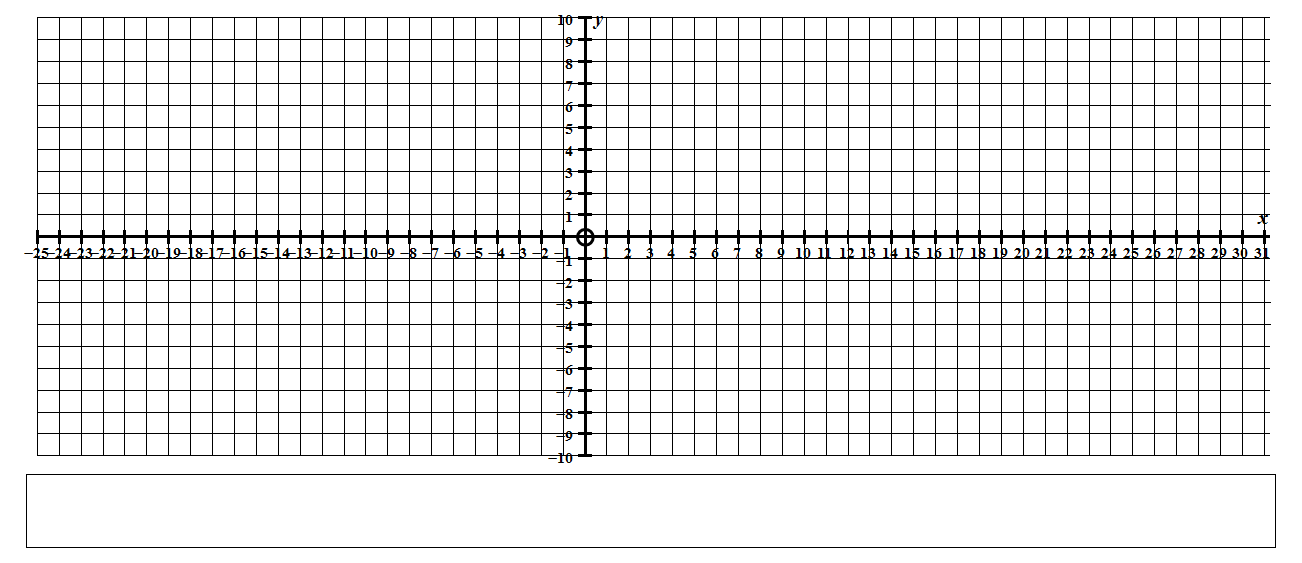
8. How are the graphs ***y = │x│*** and ***y = │ x – 4 │*** related to ***y = x2*** and ***y = (x – 4)2*** ?

9. Draw the graph of the parabola



***y = ( x – 4)2 + 3***  on the axes.

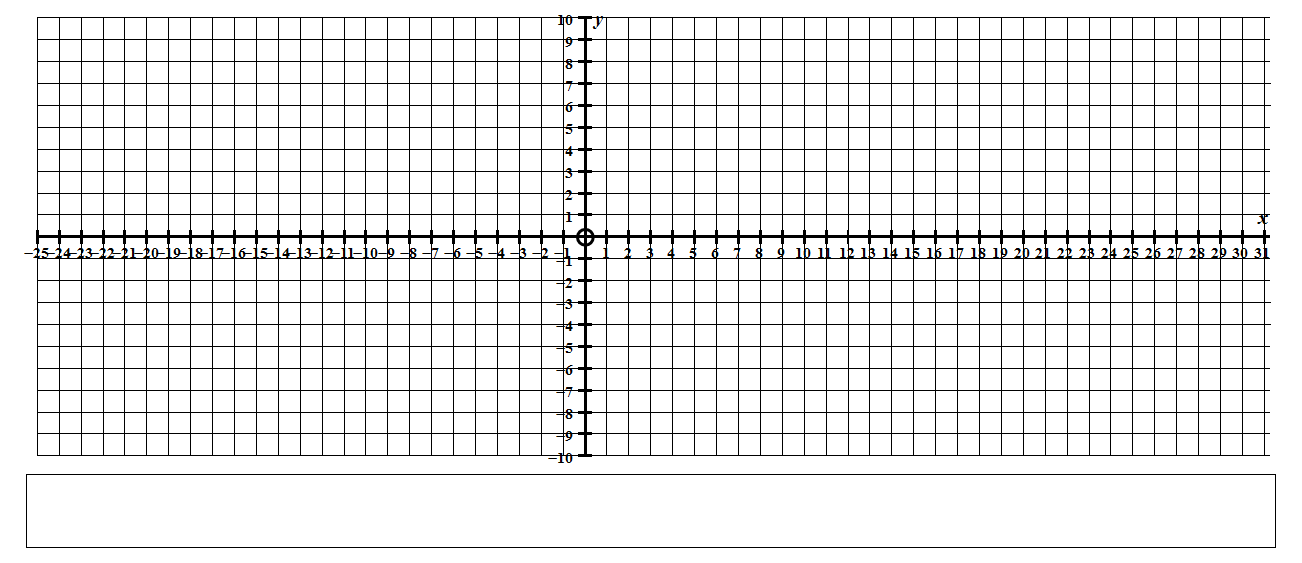
10. Draw the graph of the modulus function



***y = │ x – 4 │+ 3***  on the axes.

11. Write the equations of the graphs drawn on the axes below.

Write the domains with the equations. (ie values of ***x***)



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