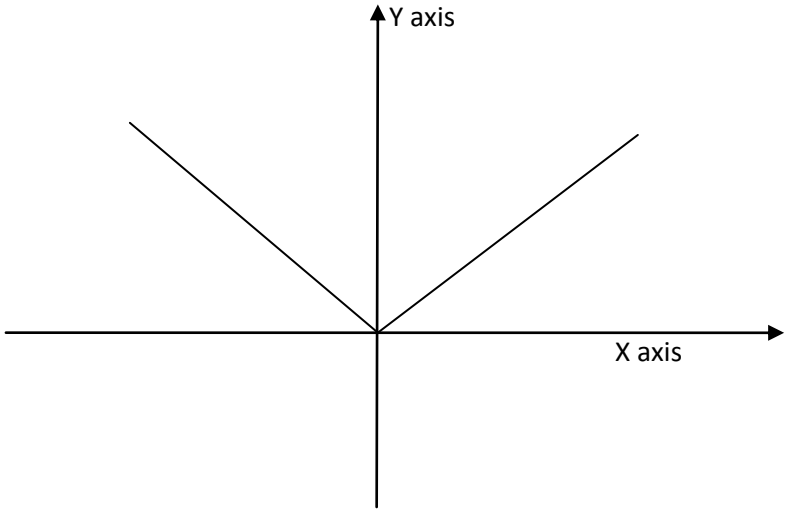
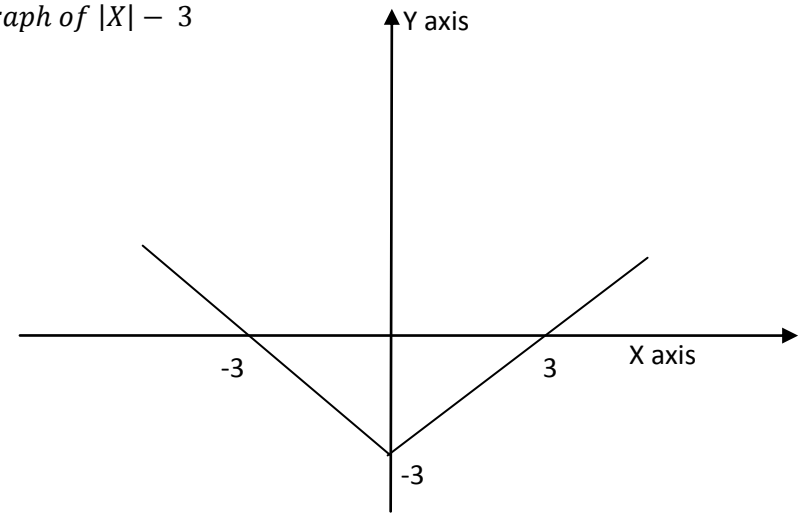
$Graph\ of\ |X|$



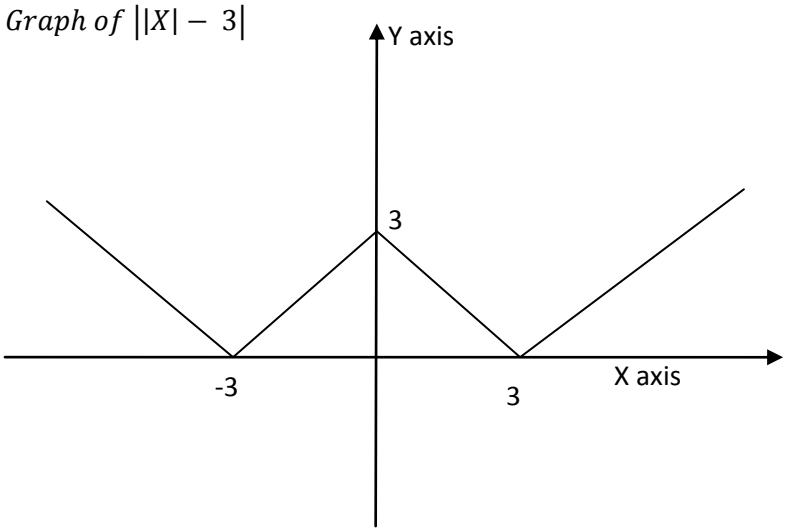

$Graph\ of\ |X| - 3$




The graph of $|X| - 3$ is just the graph of $|X|$ shifted down by 3 units.

Now we need to take the mod of this entire graph to get $\big||X| - 3\big|$. Since a mod never has a negative value, whatever part of the graph of the expression is below the x axis, in III or IV quadrant, it is reflected above the x axis in I or II quadrant.

$Graph\ of\ \big||X| - 3\big|$



Next, we need to find $\big||X| - 3\big| - X$ which is the most critical step of this question. From the graph above, from every value of y, we need to subtract the corresponding value of x.

e.g. When x = 0, y will become 3-0 = 3

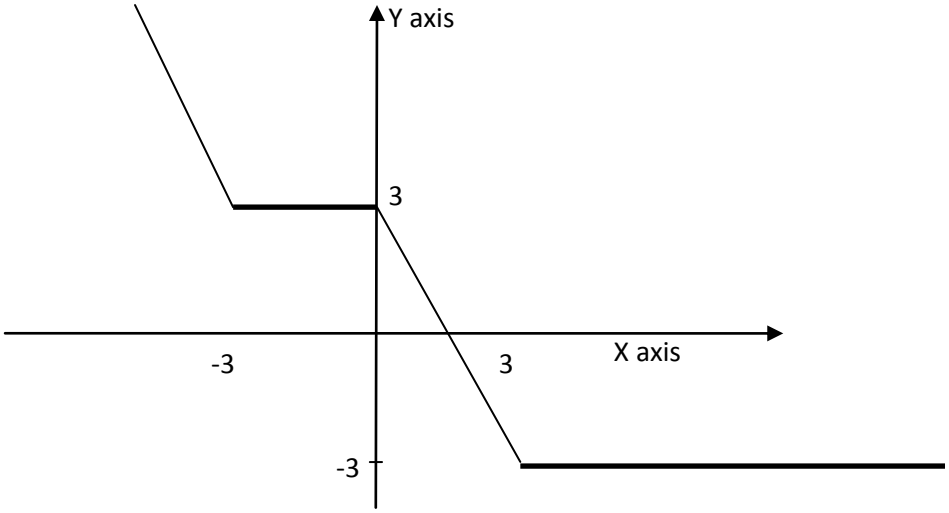
When x = 1, y will become 2-1 = 1; When x =2, y will become 1-2 = -1; When x = 3, y will become 0-3 = -3; When x = 4, y will become 1-4 = -3 and so on

When x = -1, y will become 2-(-1) = 3; When x =-2, y will become 1-(-2) = 3;

When x = -3, y will become 0-(-3) = 3; When x = -4, y will become 1-(-4) = 5 and so on

So the graph changes to the one given below:

$Graph\ of\ \big||X| - 3\big| - X$




Now we simply need to take the mod of the entire thing again as shown below:

$Graph\ of\ \Big|\big||X| - 3\big| - X\Big|$ The graph takes the value of 3 for -3 ≤ x ≤ 0 or x ≥ 3.