

Absolute Value Functions

1. On graph paper, neatly graph the function $y = |x|$ over the domain $\{-5 \leq x \leq 5\}$.

Describe the translation (ex., up 3, down 4, left 1, right 6, etc.) of the graph $y = |x|$ for each of the functions listed below.

2. $y = |x| + 2$

3. $y = |x| - 8$

4. $y = |x - 5|$

5. $y = |x + 3|$

6. $y = |x - 2| + 11$

7. $y = |x + 4| - 7$

Write the function rule for each of the following translations of $y = |x|$.

8. up 5 units

9. left 3 units

10. right 1 unit, up 2 units

11. down 7 units, right 6 units

State the coordinates of the vertex of each function.

12. $y = |x| - 6$

13. $y = |x - 8| + 3$

14. $y = |x + 12| - 9$