F.IF.C.7: Graphing Absolute Value Functions

1. The graph below represents \( f(x) \).

Which graph best represents \( |f(x)| \)?

1) 

2) 

3) 

4)
2. Which is the graph of \( y = |x| + 2 \)?

1) 

2) 

3) 

4)
3. Which graph represents the equation \( y = |x - 2| \)?

4. What is the minimum value of the function \( y = |x + 3| - 2 \)?
   
   1) \(-2\)  
   2) \(2\)  
   3) \(3\)  
   4) \(-3\)
5 Which equation represents the function shown in the accompanying graph?

![Graph of an absolute value function]

1) \( f(x) = |x| + 1 \)  
2) \( f(x) = |x| - 1 \)  
3) \( f(x) = |x + 1| \)  
4) \( f(x) = |x - 1| \)

6 The table of values below can be modeled by which equation?

<table>
<thead>
<tr>
<th>x</th>
<th>y</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2</td>
<td>5</td>
</tr>
<tr>
<td>-1</td>
<td>4</td>
</tr>
<tr>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
</tr>
</tbody>
</table>

1) \( f(x) = |x + 3| \)  
2) \( f(x) = |x| + 3 \)  
3) \( f(y) = |y + 3| \)  
4) \( f(y) = |y| + 3 \)
7 On the set of axes below, graph \( f(x) = |x - 3| + 2 \).

8 On the set of axes below, graph \( y = 2|x + 3| \). Include the interval \(-7 \leq x \leq 1\).
9. Graph the function \( f(x) = \frac{1}{2} x + 3 \) over the interval \(-8 \leq x \leq 0\).

10. On the set of axes below, graph the function \( y = |x + 1| \).

State the range of the function. State the domain over which the function is increasing.
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Answer Section

1  ANS: 1  REF: 010414b
2  ANS: 3  REF: 011117ia
3  ANS: 4  REF: 081425ia
4  ANS: 1  REF: 011712ai
5  ANS: 1  REF: 080707b
6  ANS: 2  REF: 011502a2
7  ANS:

![Graph of |x|](image1)

REF: 011825ai

8  ANS:

![Graph of |x-1|](image2)

REF: 011333ia
9. ANS:

Range: \( y \geq 0 \). The function is increasing for \( x > -1 \).

REF: fall1310ai