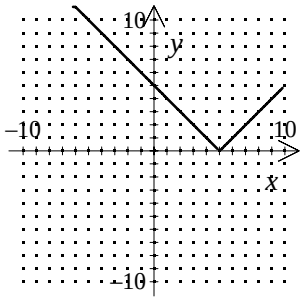
NAME:_____

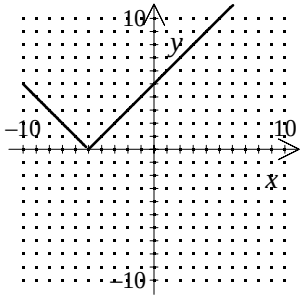
P.I. A.G.4: Identify and graph absolute value functions

1. Graph the function $f(x) = |-x - 5|$.

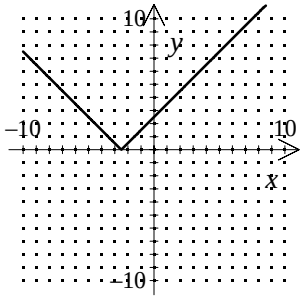
[A]



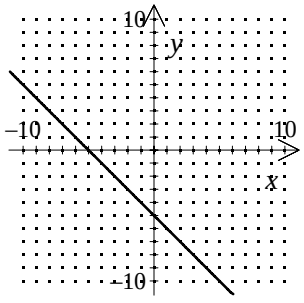
[B]



[C]

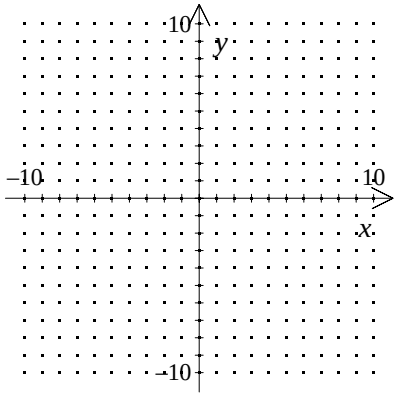


[D]



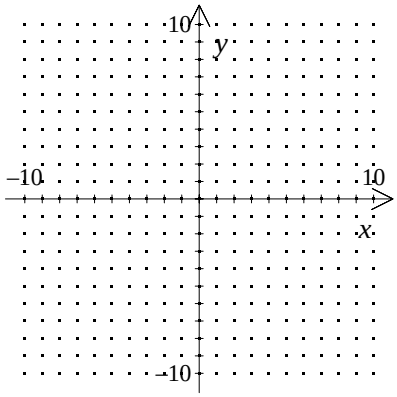
[1] _____

2. Graph the function $f(x) = |-x - 4|$.



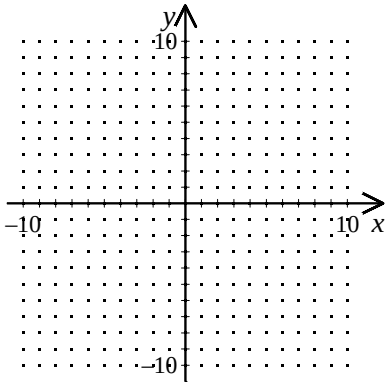
[2] _____

3. Graph the function $f(x) = |x + 2|$.



[3] _____

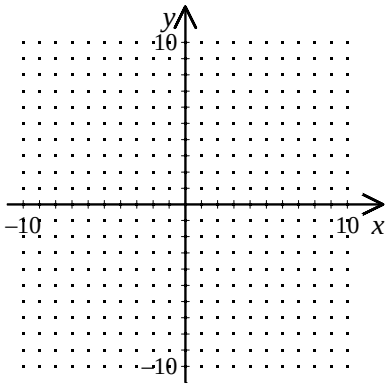
4. Graph the absolute value equation $y = |x - 3|$.



[4] _____

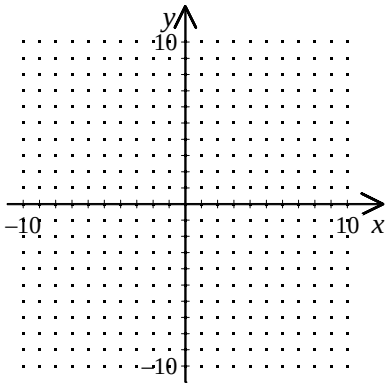
NAME:_____

5. Graph the absolute value equation $y = |-x - 1|$.



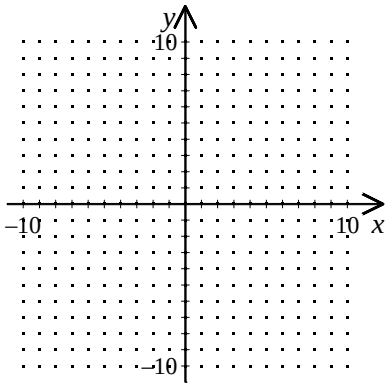
[5] _____

6. Use the graph of $y = |x|$ to graph $y = |x| - 2$.



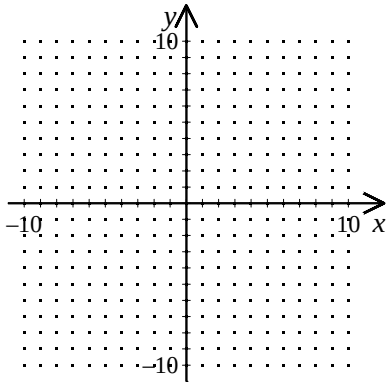
[6] _____

7. Use the graph of $y = |x|$ to graph $y = |x + 2| + 4$.



[7] _____

8. Use the graph of $y = |x|$ to graph $y = |x - 2| - 1$.

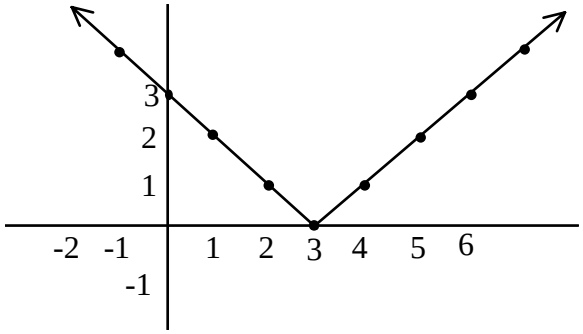


[8] _____

9. Graph the equations $y = x$ and $y = |x|$. Give as many similarities and differences about these two graphs as you can.

[9] _____

10.



Which equation does the graph above represent?

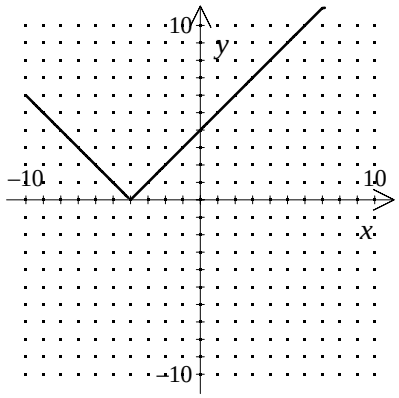
[A] $y = \frac{1}{3}x^2$ [B] $y = |x - 3|$

[C] $y = 3x^2$ [D] $y = 3 + |x|$

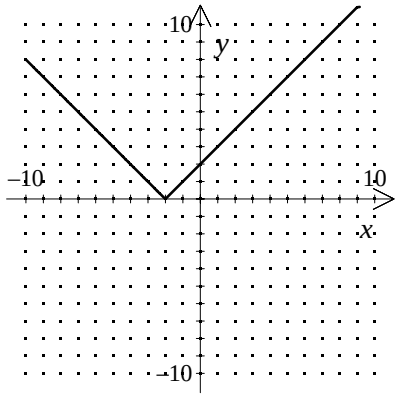
[10] _____

[1] B

[2]


10
y
−10
10
x
−10

[3]


10
y
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x
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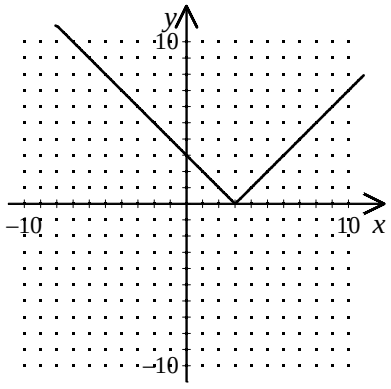
[4]


y
10
−10
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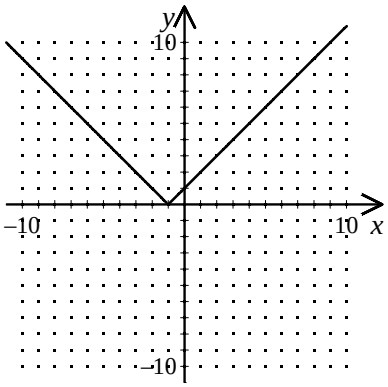
x
−10

[5]


y
10
−10
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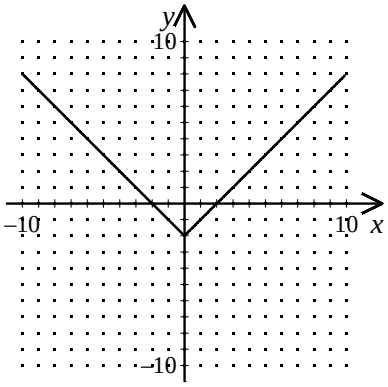
x
−10

[6]


y
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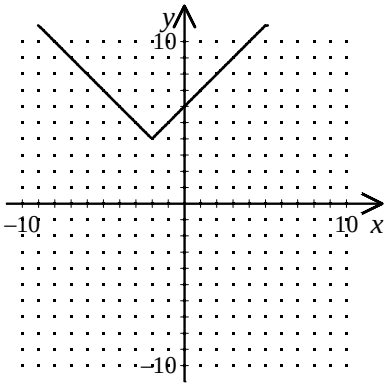
[7]


y
10
−10
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x
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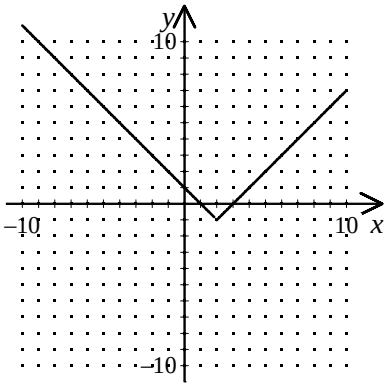
[8]


y
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x
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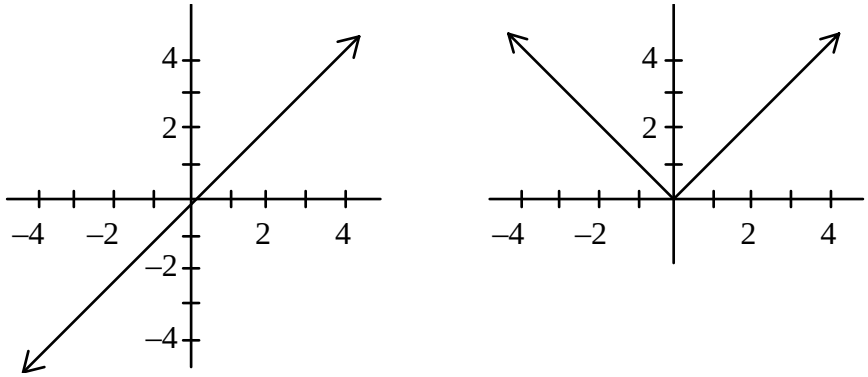

Similarities: Both go through the origin, both have one side of the graph in the first quadrant, both have the same steepness for the part in the first quadrant. Differences: $y = x$ is in the first and the third quadrants, $y = |x|$ is in the first and the second quadrants. $y = x$ goes below the x-axis, $y = |x|$ does not.

[9] $y = x$ is a straight line, $y = |x|$ is two line segments.

[10] B