

Honors Algebra 2 Summer Homework

Students will be issued an account number for the IXL program, which is a popular subscription based learning site for K-12 students. In the ***Algebra II (A2) section***, students will be required to complete the following by August 1st up to **70%**:

Equations Tab: B1, B2, B3, B4, B5

Functions Tab: D1, D2, D3, D4

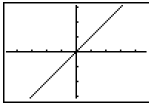
Quadratic Functions Tab: J4, J6, J9

Factoring: I1, I2, I3, I4, I5

Students are also required to complete the pages attached. For the graphing section, Please calculate the x and y intercept(s) (as needed) and state the domain and range of each graph.

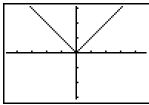
Family of Parent Functions

$$f(x) = mx$$



Slopes

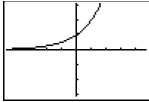
$$f(x) = |x|$$



Slopes

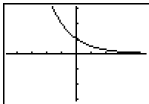
1. Know your shape.
2. Shift to the left or right
3. Move it up or down
4. X it right
5. Table of Values
6. Multiply the y values by the stretch factor if there is a vertical stretch

$$f(x) = a^x, a > 1$$



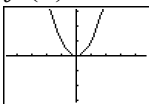
x	y
-1	1/a
0	1
1	a

$$f(x) = a^x, 0 < a < 1$$



x	y
-1	a
0	1
1	1/a

$$f(x) = x^2$$



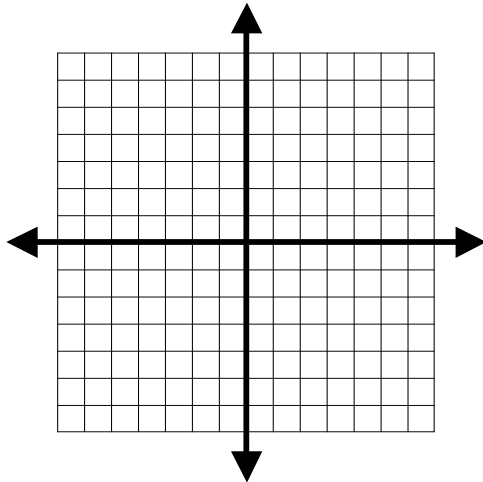
x	y
-2	4
-1	1
0	0
1	1
2	4

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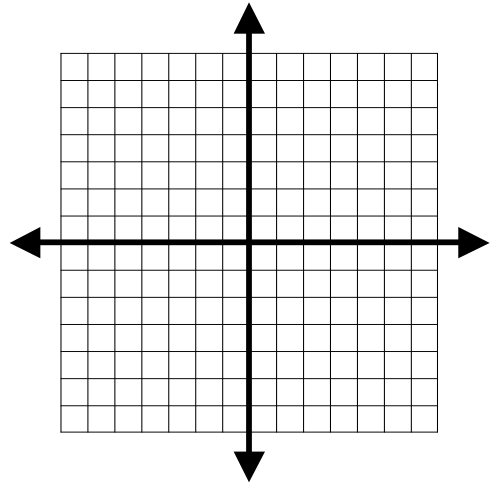
Show the t-chart or give the slope(s), Label X marks the spot, and graph.

On a separate sheet of paper calculate the x-intercept(s) and y-intercept for #2, 4, 5, 6, 7, 9, 10, 11, and 12. Show all work for full credit. You must show the calculations. Picking a point off the graph is not sufficient and will not count for credit. Please also state the domain and range.

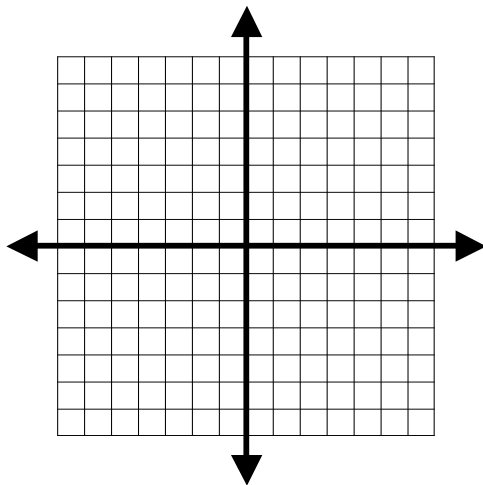
1. $f(x) = -(3)^{x+6} + 5$



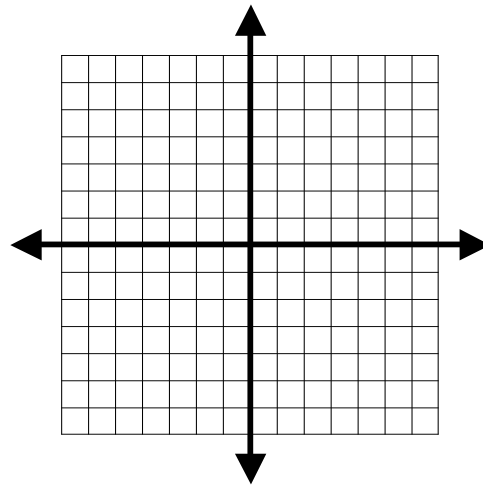
2. $f(x) = -2(x-1)^2 + 3$



3. $f(x) = -\left(\frac{1}{4}\right)^{x+2} - 3$

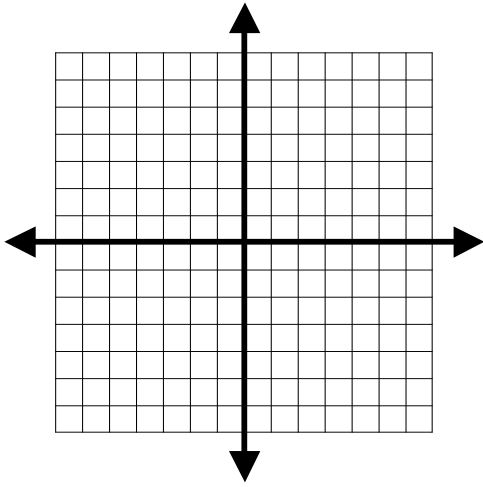


4. $y = 2x^2 + 12x + 13$

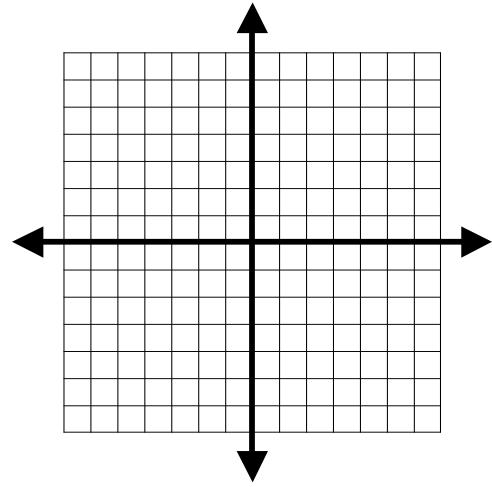


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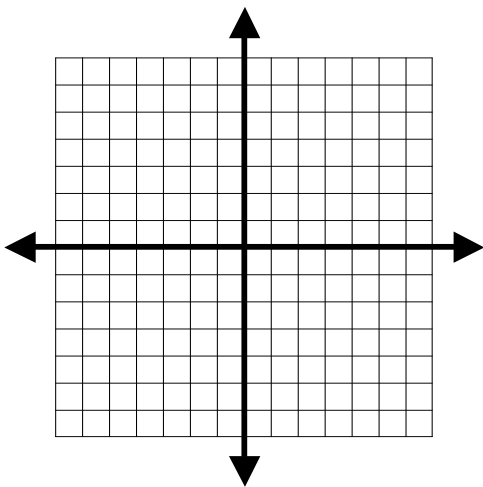
5. $y = -\frac{3}{4}|x-5|+7$



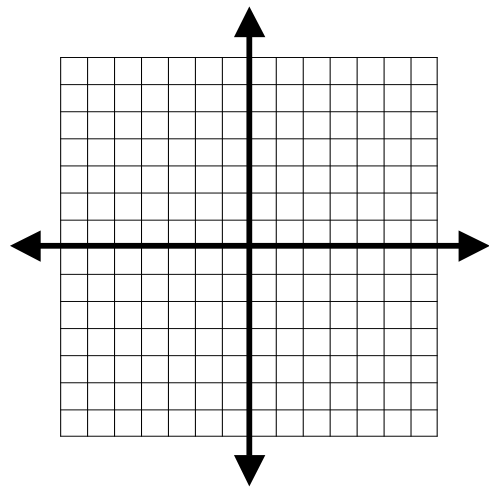
6. $y = -\frac{2}{3}(x-6)+4$



7. $y = -\frac{1}{2}(x-5)^2+3$

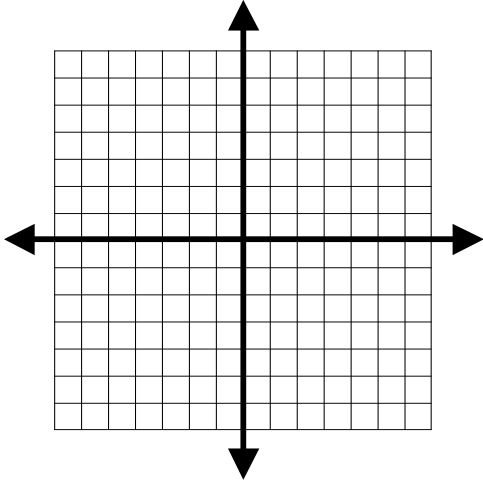


8. $y = -\left(\frac{1}{2}\right)^x+3$

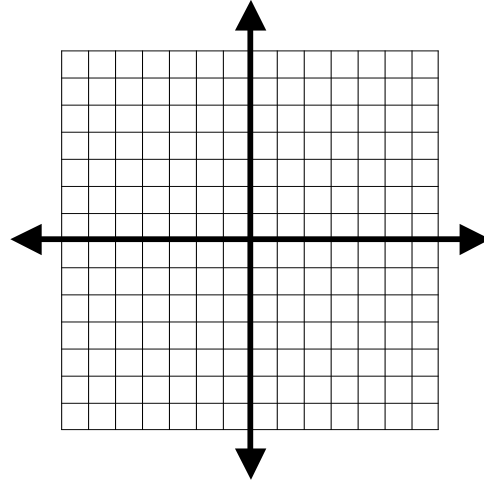


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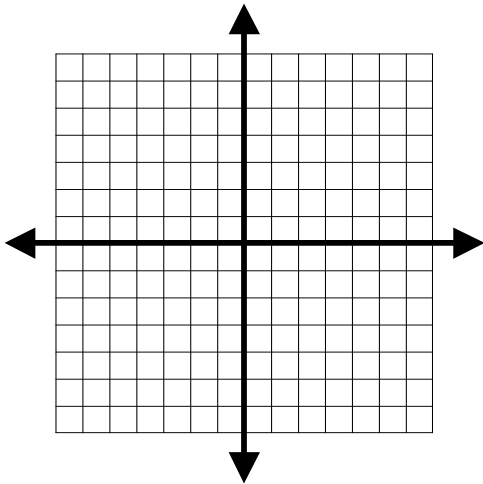
9. $y = x^2 + 4x - 3$



10. $y = (x - 3)(x + 5)$



11. $y = -2|x - 1| + 3$



12. $y = -3(x + 1) - 5$

