



Functions and Applications

Chapter 1: Introduction to the Quadratic Function

1.6 Using Multiple Transformations to Graph Quadratic Functions



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Sketch $h(x) = 2(x + 3)^2 - 1$ by applying the appropriate transformations to the graph of $f(x) = x^2$.

x	y
-3	9
-2	4
-1	1
0	0
1	1
2	4
3	9



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Describe the transformations you would use to graph the function $f(x) = -(x - 2.5)^2 - 5$.



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Graph $g(x) = -7 - (x + 3)^2$ by using transformations.

x	y
-3	9
-2	4
-1	1
0	0
1	1
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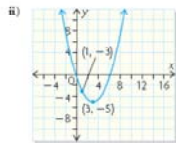
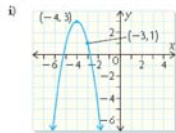
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3. Match each function to its graph.

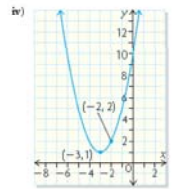
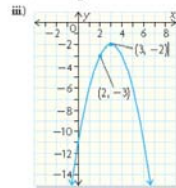
a) $f(x) = (x + 3)^2 + 1$

b) $f(x) = -2(x + 4)^2 + 3$



c) $f(x) = -(x - 3)^2 - 2$

d) $f(x) = \frac{1}{2}(x - 3)^2 - 5$



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Show the Transformations in the table necessary to graph each of the equations.

a) $f(x) = 3(x + 2)^2$

c) $f(x) = \frac{1}{3}x^2 - 3$

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

d) $f(x) = -\frac{1}{2}(x + 2)^2 + 4$

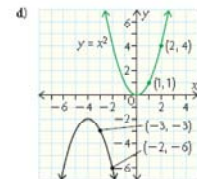
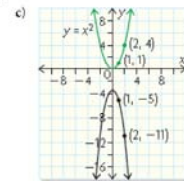
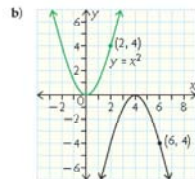
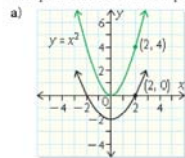
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4. Transformations are applied to the graphs of $y = x^2$ to obtain the black parabolas. Describe the transformations that were applied. Write an equation for each black parabola.



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Homework:

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