

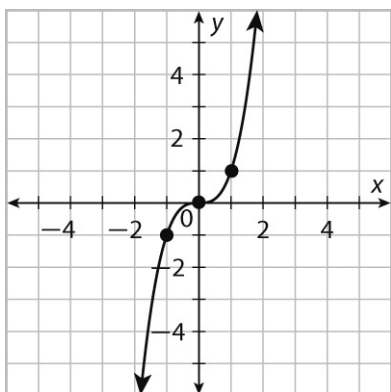
**LESSON**  
**5-1**

# Graphing Cubic Functions

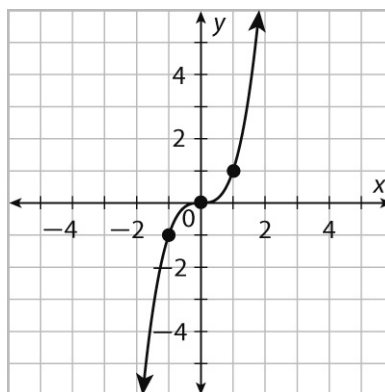
## Practice and Problem Solving

Calculate the reference points for each transformation of the parent function  $f(x) = x^3$ . Then graph the transformation. (The graph of the parent function is shown.)

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

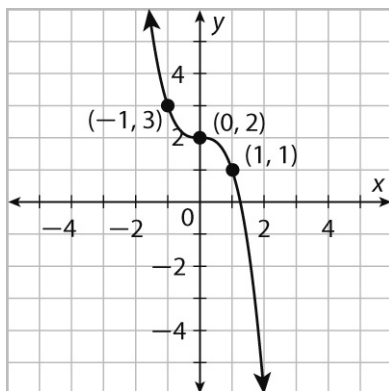


2.  $g(x) = -3(x + 2)^3 - 2$

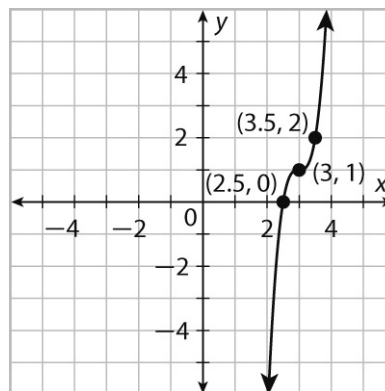


Write the equation of the cubic function whose graph is shown.

3.



4.



**Solve.**

5. The graph of  $f(x) = x^3$  is reflected across the  $x$ -axis. The graph is then translated 11 units up and 7 units to the left. Write the equation of the transformed function.

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6. The graph of  $f(x) = x^3$  is stretched vertically by a factor of 6. The graph is then translated 9 units to the right and 3 units down. Write the equation of the transformed function.

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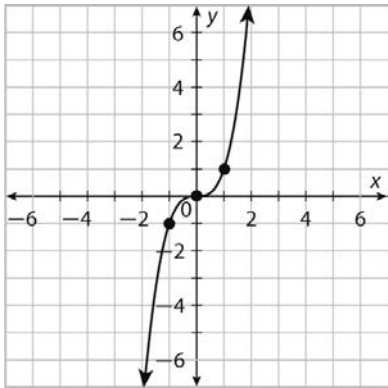
**LESSON**  
**5-1**

# Graphing Cubic Functions

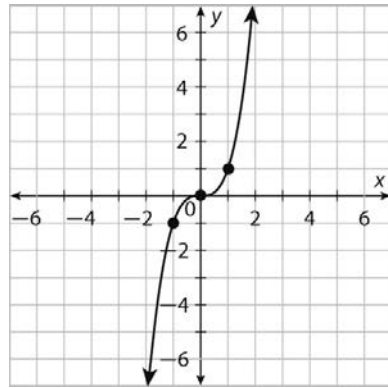
## Practice and Problem Solving

Calculate the reference points for each transformation of the parent function  $f(x) = x^3$ . Then graph the transformation. (The graph of the parent function is shown.)

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

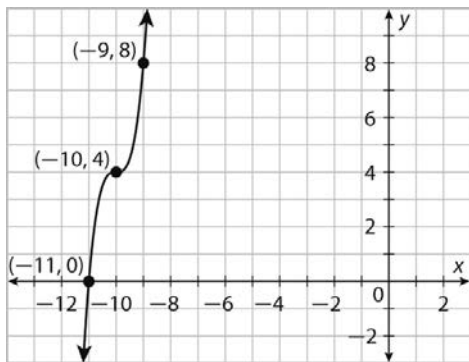


8.  $g(x) = 1.25(x+5)^3 - 1.25$

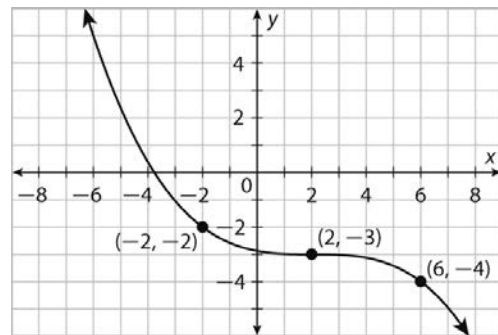


Write the equation of the cubic function whose graph is shown.

9.



10.



**Solve.**

11. The graph of the function  $y = 3(x-2)^3 + 7$  is translated 2 units to the right and then 4 units down. Write the equation of the final graph.

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12. The graph of the function  $y = (x)^3 + 5$  is translated 2 units to the left and then reflected across the x-axis. Write the equation of the final graph.

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