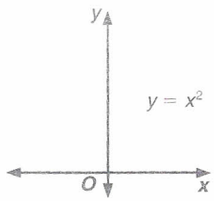
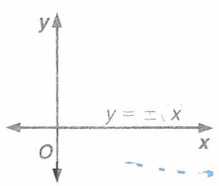
Sketch the graph of $y = \pm 2\sqrt{x + 3} - 6$.

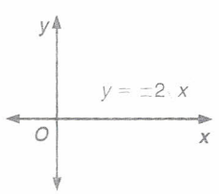
The parent graph is the graph of $y = x^2$.



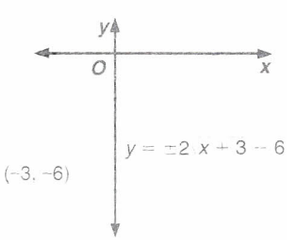
Reflect the parent graph over the line $y = x$ to obtain its inverse whose equation is $y = \pm\sqrt{x}$.



Sketch the graph of $y = \pm 2\sqrt{x}$, which is wider than the reflection of the parent graph.



The graph of $y = \pm 2\sqrt{x + 3}$ is the graph of $y = \pm 2\sqrt{x}$, translated 3 units left. Subtracting 6 translates the graph 6 units down.



CHECKING FOR UNDERSTANDING

Read and study the lesson to answer each question.

1. **Describe** the relationship between the coordinates of the ordered pairs of a relation and its inverse.
2. **Demonstrate** how transformations are used to graph $y = \sqrt[3]{x - 2} + 3$.
3. **Find a counterexample** to this statement: The inverse of a function is also a function.
4. **Show** how you know whether the inverse of a function is also a function without graphing the inverse.

Given point P of the function $f(x)$, state the corresponding point P' in the inverse of the function.

5. $P(-4, 5)$
6. $P(-3, -2)$
7. $P(-2, 8)$
8. $P(3t, 8u)$