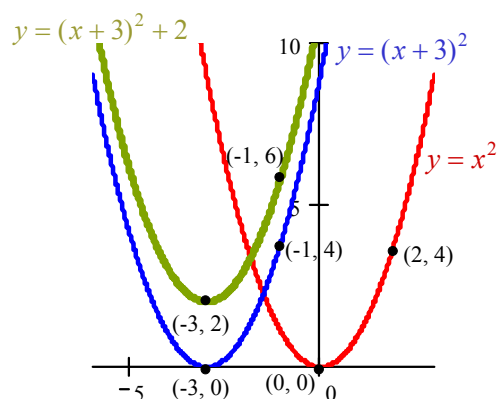
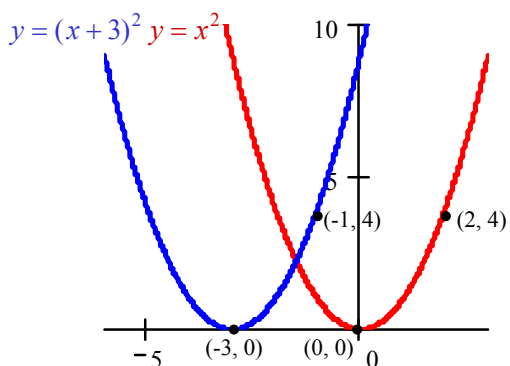
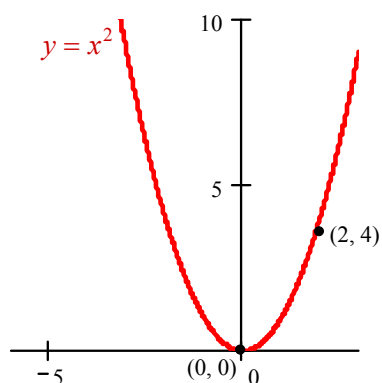


If a real number c is added to the right side of a function $y = f(x)$, the graph of the new function $y = f(x) + c$ is the graph of f **shifted vertically up** (if $c > 0$) or down (if $c < 0$).

If a real number c is added to the argument x of a function $y = f(x)$, the graph of the new function $y = f(x - c)$ is the graph of f **shifted horizontally right** (if $c > 0$) or left (if $c < 0$).

Graph the function

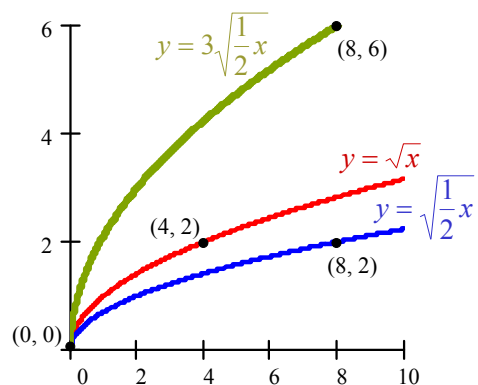
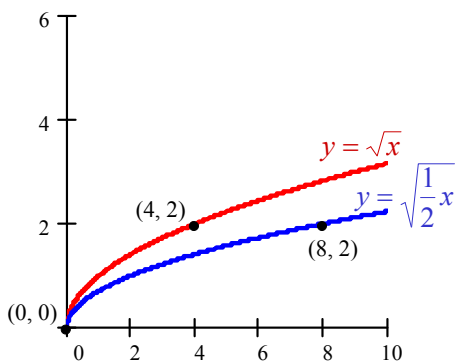
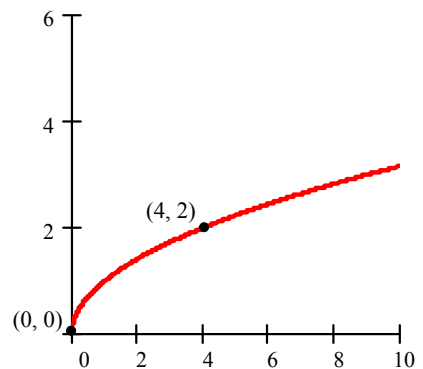
$$f(x) = (x + 3)^2 + 2$$



When the right side of a function $y = f(x)$ is multiplied by a positive number k , the graph of the new function $y = kf(x)$ is a **vertically compressed** (if $0 < k < 1$) **vertically stretched** (if $k > 1$) version of the graph of $y = f(x)$.

When the argument of a function $y = f(x)$ is multiplied by a positive number k , the graph of the new function $y = f(kx)$ is a **horizontally stretched** (if $0 < k < 1$) or **horizontally compressed** (if $k > 1$) version of the graph of $y = f(x)$.

Graph $f(x) = 3\sqrt{\frac{1}{2}x}$



When the right side of a function $y = f(x)$ is multiplied by -1 , the graph of the new function $y = -f(x)$ is the **reflection about the x-axis** of the graph of the function $y = f(x)$.

When the argument of a function $y = f(x)$ is multiplied by -1 , the graph of the new function $y = f(-x)$ is the **reflection about the y-axis** of the graph of $y = f(x)$.

Graph the function

$$f(x) = -\sqrt{-x}$$

