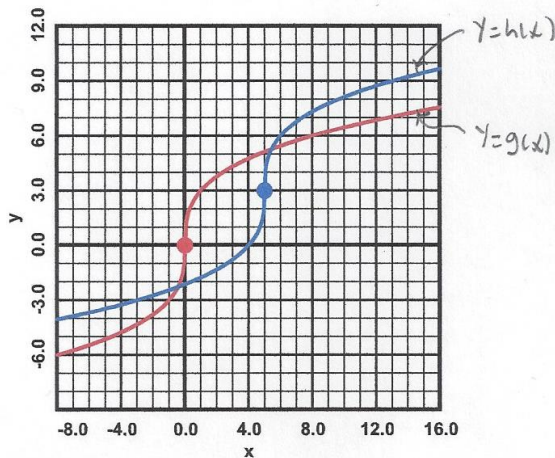


PRE-AP ALGEBRA 2

3C.3 CLASSWORK

1) Let $y = f(x) = \sqrt[3]{x}$.

- Construct a function $y = g(x)$ which is a vertical stretch, by a factor of 3, of $y = f(x)$.
- Graph $y = g(x)$ on the axes below.
- Construct a function $y = h(x)$ which is a translation, by $(5, 3)$, of $y = g(x)$.
- Graph $y = h(x)$.

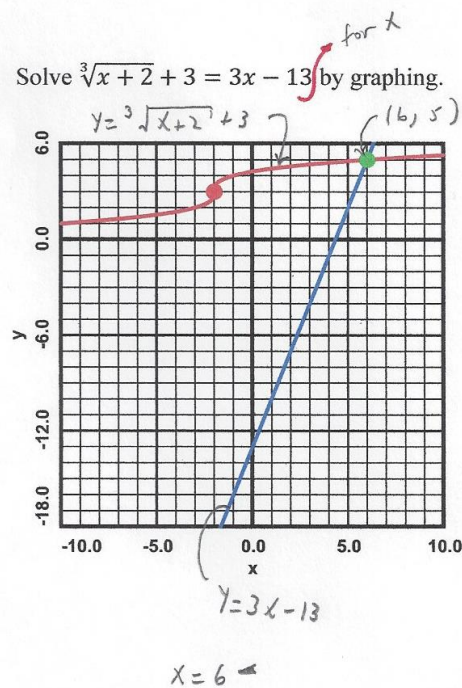


(a) $y = g(x) = 3f(x) = 3 \cdot \sqrt[3]{x}$
 (b) $y = h(x) = g(x-5) + 3 = 3 \cdot \sqrt[3]{x-5} + 3$

3) For $y = f(x) = 15 \cdot \sqrt[3]{x+3} - 9$, calculate $y = f^{-1}(x)$.

$x = 15 \cdot \sqrt[3]{y+3} - 9$, $15 \cdot \sqrt[3]{y+3} = x+9$,
 $\sqrt[3]{y+3} = \frac{1}{15}x + \frac{3}{5}$, $y+3 = \left(\frac{1}{15}x + \frac{3}{5}\right)^3$
 $y = f^{-1}(x) = \left(\frac{1}{15}x + \frac{3}{5}\right)^3 - 3$

4) Solve $\sqrt[3]{x+2} + 3 = 3x - 13$ by graphing.



2) Describe the transformation which takes

$y = f(x) = \sqrt[3]{x}$ to
 $y = g(x) = 9 \cdot \sqrt[3]{x-17} - 4$.

vertically stretch $y = f(x)$ by a factor of 9,
 then translate by $(17, -4)$