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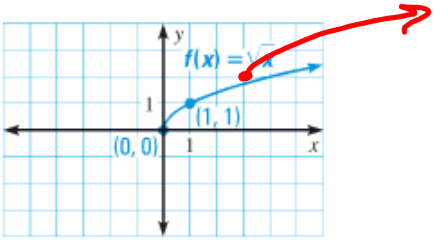
Radical Graphs

KEY CONCEPT *For Your Notebook*

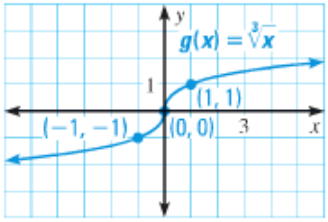
Parent Functions for Square Root and Cube Root Functions

The parent function for the family of square root functions is $f(x) = \sqrt{x}$.



Domain: $x \geq 0$, Range: $y \geq 0$

The parent function for the family of cube root functions is $g(x) = \sqrt[3]{x}$.



Domain and range: all real numbers

shift vertical

$y = a\sqrt{x-h} + k$

steepness

shift horizontal

$y = \sqrt{x-3} + 2$

D: $x \geq 3$

R: $y \geq 2$

p. 449/ # 11 - 20, Sketch, number appropriately, state domain and range, compare to parent graph

35, 36, 38, 39 - due Wednesday, February 12

12. The cost (in dollars) of g gallons of gasoline can be modeled by $C(g) = 3.15g$. The amount of gasoline used by an SUV can be modeled by $g(d) = 0.025d^{1.24}$ where d is the distance (in miles). Find $C(g(d))$. Evaluate $C(g(500))$. What does $C(g(500))$ represent?

$C(g) = 3.15g$

$g(d) = 0.025d^{1.24}$

$C(g(d)) = 3.15(0.025d^{1.24})$

$= .07875\,d^{1.24}$

$C(g(500)) = .07875(500)^{1.24}$

$= .07875(2221.89)$

$= \$174.97$

$C(g(500))$ = cost to drive the SUV 500 miles