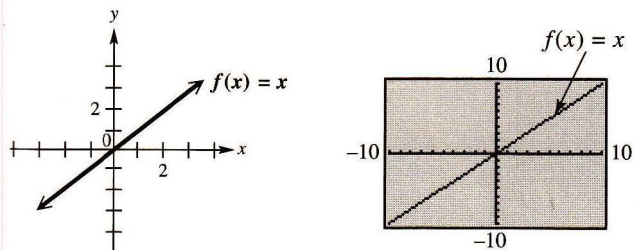


FUNCTION CAPSULES

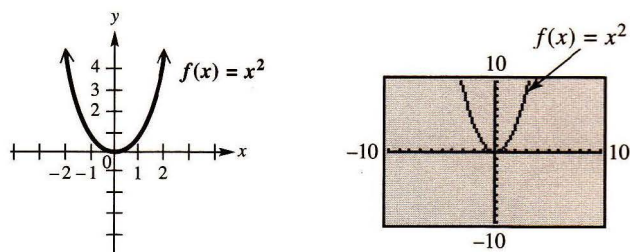
IDENTITY FUNCTION $f(x) = x$

Domain: $(-\infty, \infty)$ Range: $(-\infty, \infty)$



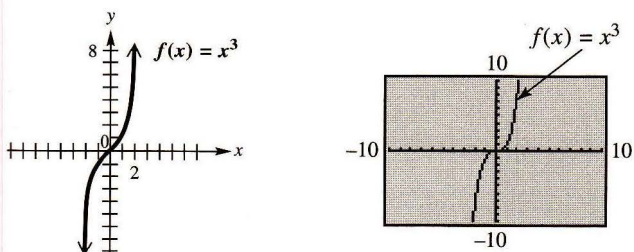
SQUARING FUNCTION $f(x) = x^2$

Domain: $(-\infty, \infty)$ Range: $[0, \infty)$



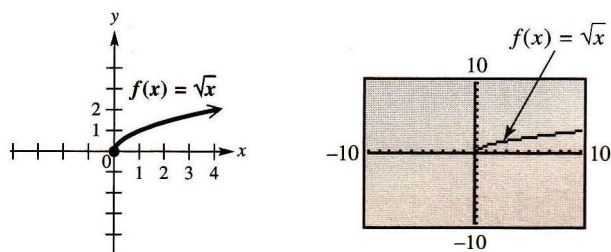
CUBING FUNCTION $f(x) = x^3$

Domain: $(-\infty, \infty)$ Range: $(-\infty, \infty)$



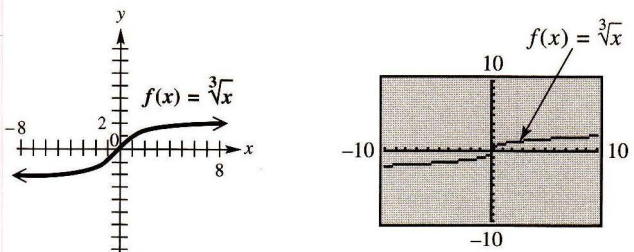
SQUARE ROOT FUNCTION $f(x) = \sqrt{x}$

Domain: $[0, \infty)$ Range: $[0, \infty)$



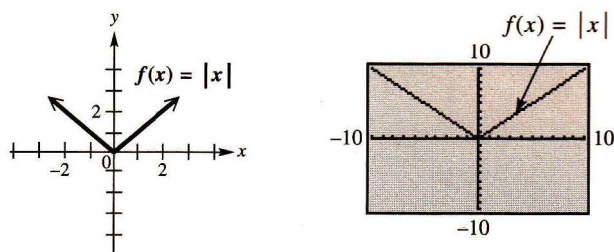
CUBE ROOT FUNCTION $f(x) = \sqrt[3]{x}$

Domain: $(-\infty, \infty)$ Range: $(-\infty, \infty)$



ABSOLUTE VALUE FUNCTION $f(x) = |x|$

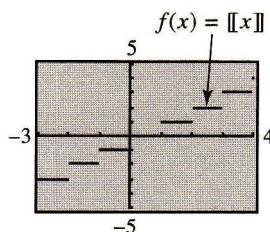
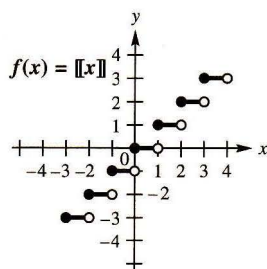
Domain: $(-\infty, \infty)$ Range: $[0, \infty)$



GREATEST INTEGER FUNCTION $f(x) = \lceil x \rceil$

Domain: $(-\infty, \infty)$

Range: $\{x \mid x \text{ is an integer}\} = \{\dots, -3, -2, -1, 0, 1, 2, 3, \dots\}$

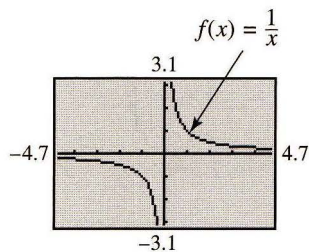
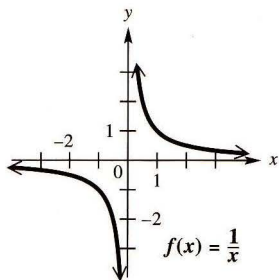


Dot mode

FUNCTION CAPSULES

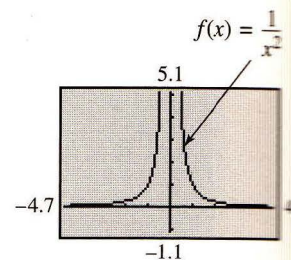
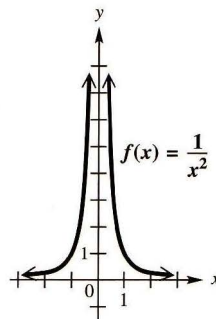
RECIPROCAL FUNCTION $f(x) = \frac{1}{x}$

Domain: $(-\infty, 0) \cup (0, \infty)$ Range: $(-\infty, 0) \cup (0, \infty)$



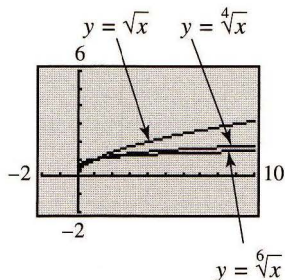
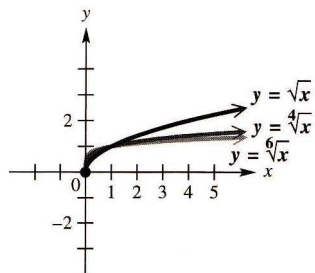
RATIONAL FUNCTION $f(x) = \frac{1}{x^2}$

Domain: $(-\infty, 0) \cup (0, \infty)$ Range: $(0, \infty)$



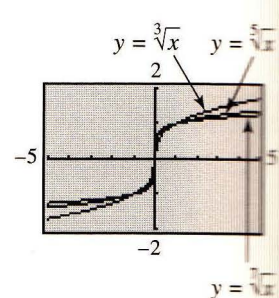
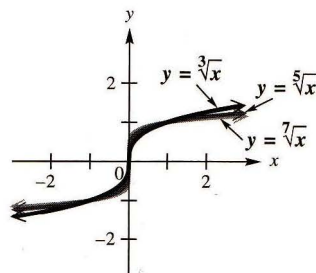
ROOT FUNCTION, n EVEN $f(x) = \sqrt[n]{x}$

Domain: $[0, \infty)$ Range: $[0, \infty)$



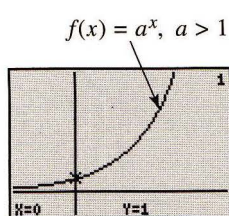
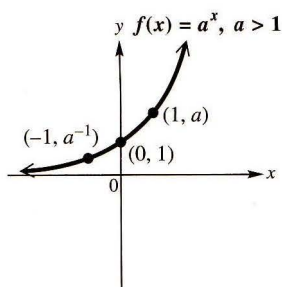
ROOT FUNCTION, n ODD $f(x) = \sqrt[n]{x}$

Domain: $(-\infty, \infty)$ Range: $(-\infty, \infty)$



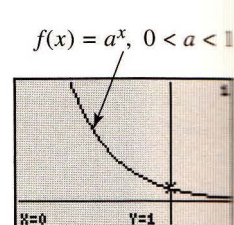
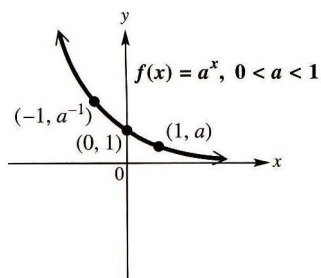
EXPONENTIAL FUNCTION $f(x) = a^x, a > 1$

Domain: $(-\infty, \infty)$ Range: $(0, \infty)$



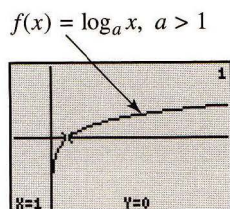
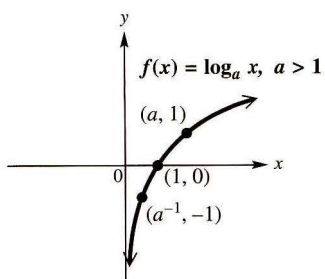
EXPONENTIAL FUNCTION $f(x) = a^x, 0 < a < 1$

Domain: $(-\infty, \infty)$ Range: $(0, \infty)$



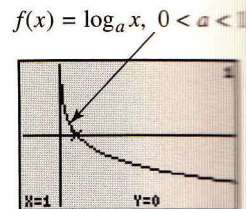
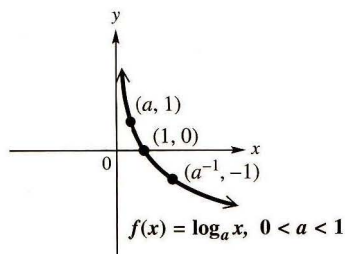
LOGARITHMIC FUNCTION $f(x) = \log_a x, a > 1$

Domain: $(0, \infty)$ Range: $(-\infty, \infty)$



LOGARITHMIC FUNCTION $f(x) = \log_a x, 0 < a < 1$

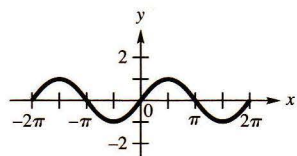
Domain: $(0, \infty)$ Range: $(-\infty, \infty)$



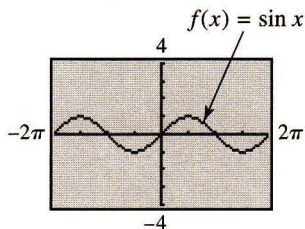
FUNCTION CAPSULES

SINE FUNCTION $f(x) = \sin x$

Domain: $(-\infty, \infty)$ Range: $[-1, 1]$

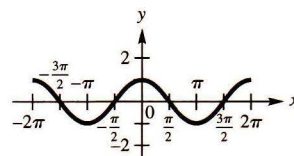


$$f(x) = \sin x, -2\pi \leq x \leq 2\pi$$

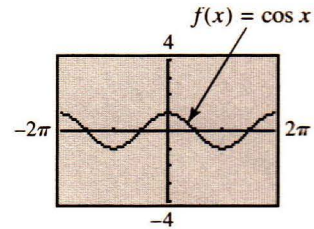


COSINE FUNCTION $f(x) = \cos x$

Domain: $(-\infty, \infty)$ Range: $[-1, 1]$

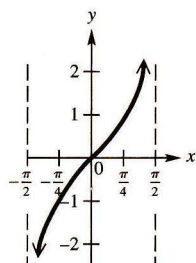


$$f(x) = \cos x, -2\pi \leq x \leq 2\pi$$

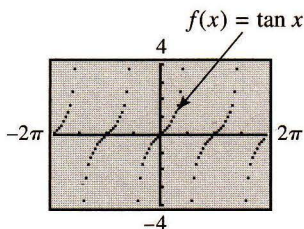


TANGENT FUNCTION $f(x) = \tan x$

Domain: $\{x | x \neq (2n + 1)\frac{\pi}{2}, \text{ where } n \text{ is an integer}\}$ Range: $(-\infty, \infty)$



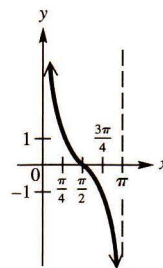
$$f(x) = \tan x, -\frac{\pi}{2} < x < \frac{\pi}{2}$$



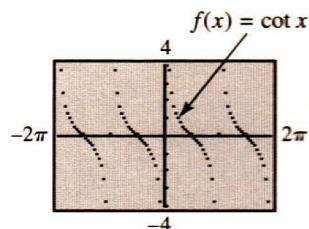
Dot mode

COTANGENT FUNCTION $f(x) = \cot x$

Domain: $\{x | x \neq n\pi, \text{ where } n \text{ is an integer}\}$ Range: $(-\infty, \infty)$



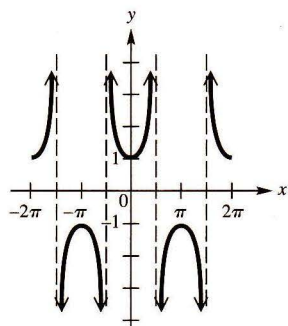
$$f(x) = \cot x, 0 < x < \pi$$



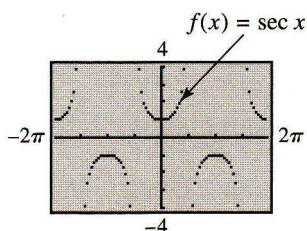
Dot mode

SECANT FUNCTION $f(x) = \sec x$

Domain: $\{x | x \neq (2n + 1)\frac{\pi}{2}, \text{ where } n \text{ is an integer}\}$
Range: $(-\infty, -1] \cup [1, \infty)$



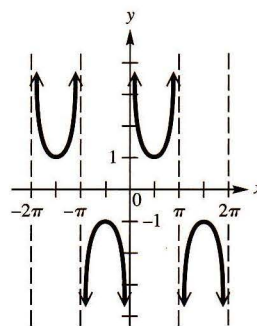
$$f(x) = \sec x, -2\pi \leq x \leq 2\pi$$



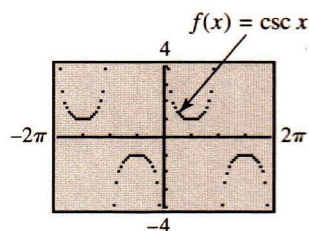
Dot mode

COSECANT FUNCTION $f(x) = \csc x$

Domain: $\{x | x \neq n\pi, \text{ where } n \text{ is an integer}\}$
Range: $(-\infty, -1] \cup [1, \infty)$



$$f(x) = \csc x, -2\pi < x < 2\pi$$



Dot mode