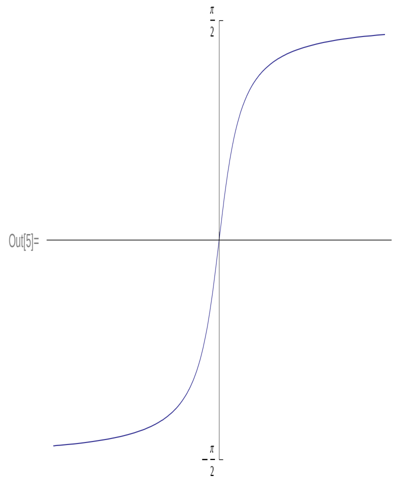
of $\arctan x$ is all $\Re$ and range is $(-\pi/2, \pi/2)$. And the graph of $y = \arctan x$ is:



Remark: Note that this is an example of a function with two different horizontal asymptotes. Think of the horizontal asymptotes for the time being the horizontal lines with which graph of $y = \arctan x$ becomes "snug" in the long run (as x becoming larger and larger or smaller and smaller.). Judging our graph based on this "rough" definition you can say that $\arctan x$ becomes "snug" with $y = -\pi/2$ line as x becomes smaller and smaller and it becomes "snug" with the $y = \pi/2$ line as x becomes larger and larger.

Example Simplify the expression $\cos(\tan^{-1}(x))$

Let $y = \tan^{-1} x$ then $x = \tan y$ where $-\pi/2 < y < \pi/2$. Construct the triangle with angle y, and whose hypotenuse is $\sqrt{1+x^2}$ and $x = \tan y$. From here you can easily read $\cos(\tan^{-1}(x)) = \cos y = \frac{1}{\sqrt{1+x^2}}$

Rest of the inverses

$$y = \cot^{-1} x (x \in \Re) \Leftrightarrow \cot y = x \text{ and } y \in (0, \pi)$$

$$y = \sec^{-1} x (|x| \geq 1) \Leftrightarrow \sec y = x \text{ and } y \in [0, \pi/2) \cup [\pi, 3\pi/2)$$

$$y = \csc^{-1} x (|x| \geq 1) \Leftrightarrow \csc y = x \text{ and } y \in [0, \pi/2) \cup [\pi, 3\pi/2)$$

Last graph I'll provide will be for $\sec^{-1} x$ below you should try out the other two yourself.