

Lesson 7: Graphing Inverse Trigonometric Functions

Question #1

Reference Q.17781

Given that the general transformations of $f(x) = \arcsin(x)$ is $g(x) = a \arcsin(b(x - c)) + d$, how does each of the following affect the graph?

- a-value
- b-value
- c-value
- d-value

Question #2

Reference Q.17782

Describe in words how the graph of $g(x) = -2 \arccos(3(x + 1)) - 2$ compares to the parent function $f(x) = \arccos x$.

Question #3

Reference Q.17783

Describe in words how the graph of $y = \frac{1}{2} \tan^{-1}\left(\frac{2}{5}(x - 1)\right) + 7$ compares to its parent function.

Question #4

Reference Q.17784

Which of the following is not true about $g(x) = \arcsin(-4(x - 2)) - 5$?

- Horizontally Stretched by a factor of $\frac{1}{4}$
- Vertically Stretched by a factor of $\frac{1}{4}$
- Reflected in the y-axis
- Horizontally translated 2 units to the right

Question #5

Reference Q.17785

What is the equation given that $y = \arctan x$ is transformed according to the following properties:

- Reflected in the x-axis
- Horizontally translated 2 units to the right
- Vertically translated 1 unit down
- Horizontally stretched by a factor of $\frac{1}{2}$

Question #6

Reference Q.17786

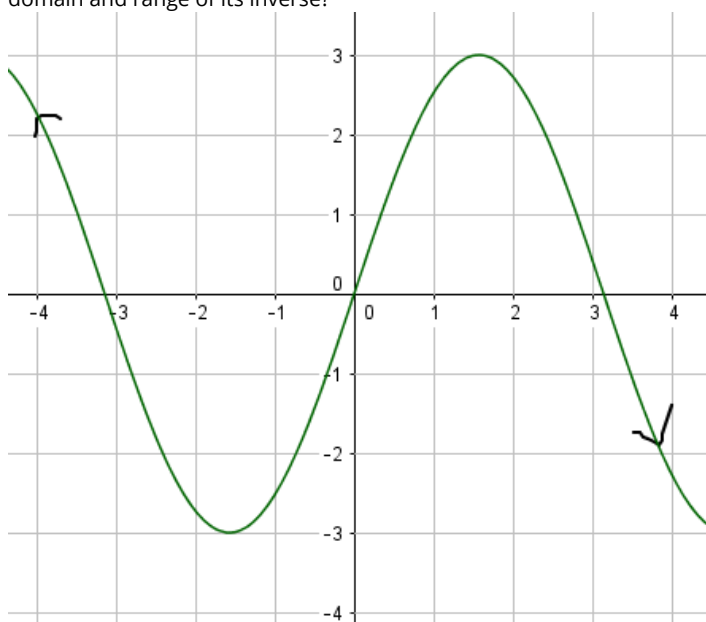
What is the equation given that $y = \sin^{-1} x$ is transformed according to the following properties:

- Reflected in the y-axis
- Vertically stretched by a factor of $\frac{1}{2}$
- Vertically translated 1 unit down
- Horizontally stretched by a factor of $\frac{2}{7}$

Question #7

Reference Q.17787

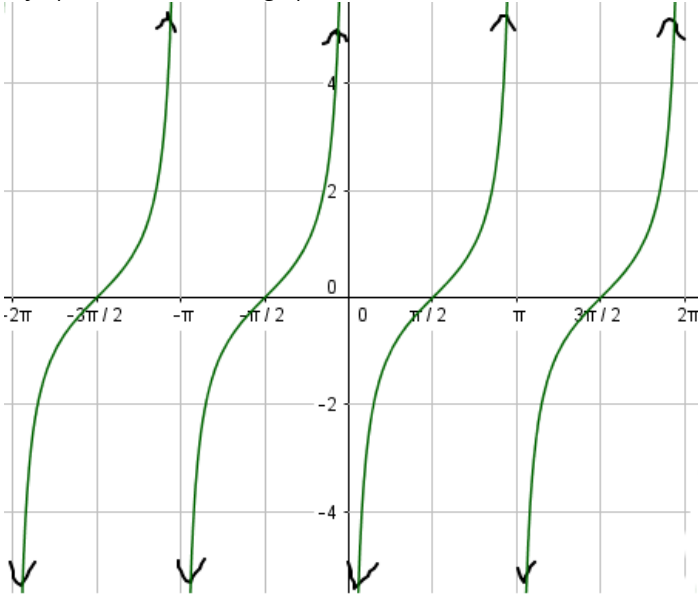
Given the graph of a transformed sine function below, what would the domain and range of its inverse be?



Question #8

Reference Q.17788

Given the graph below, what would be the equations of the asymptotes in the inverse graph?



Question #9

Reference Q.17789

If the period of $f(x) = \tan x$ is π , what is the period of $y = \arctan x$?

Question #10

Reference Q.17790

- a. Using transformations, sketch a graph of $f(x) = 2 \arccos(x - 2) + 1$.

x	y
-1	π
0	$\frac{\pi}{2}$
1	0

b. What is the domain and range $f(x)$?

Question #11

Reference Q.17791

- a. Using transformations, sketch a graph of $f(x) = -\arcsin\left(\frac{1}{2}(x + 1)\right) - 3$.
- b. What is the domain and range $f(x)$?

Question #12

Reference Q.17792

- a. Using transformations, sketch a graph of $f(x) = \frac{1}{2} \arctan(x + 3) - 2$.
- b. What is the domain and range $f(x)$?

Question #13

Reference Q.17793

- a. Using transformations, sketch a graph of $f(x) = \arccos\left(\frac{2}{3}(x + 4)\right)$.
- b. What is the domain and range $f(x)$?

Question #14

Reference Q.17794

- a. Using transformations, sketch a graph of $f(x) = 3 \arcsin(-(x - 2))$.
- b. What is the domain and range $f(x)$?

Question #15

Reference Q.17795

- a. Using transformations, sketch a graph of $f(x) = -3 \arctan(x) + 1$.
- b. What is the domain and range $f(x)$?

Question #16

Reference Q.17796

Where are the **exact** locations of the asymptotes in the function $f(x) = \frac{3}{4} \arctan(2(x - 5)) - 2$.

Question #17

Reference Q.17797

Where are the **exact** locations of the asymptotes in the function $f(x) = -4 \arctan\left(\frac{5}{2}x\right) + 1$.

Question #18

Reference Q.17798

- What is the equation of the inverse of $y = -2 \sin\left(\frac{1}{4}x\right) + 3$?
- Compare the transformations being applied in the original sine function and its inverse. What do you notice?

Question #19

Reference Q.17799

Without graphing or solving for the inverse equation, list the transformations of the inverse of $y = 5 \cos(-(x + 3)) + 2$.

Question #20

Reference Q.17800

Given the sine graph below, what is the domain and range of the inverse graph (without restricting it to become a function)?

