

Calculus 2

Applications of Derivatives for Inverse Trigonometric Functions

Use concepts from Calculus 1 to answer the following questions.

$$y = \tan^{-1}\left(\frac{x-1}{x+1}\right)$$

1. Determine the intervals of increasing and decreasing.
2. Relative Max and Relative Min, if any.
3. Intervals of concavity.
4. Limits at Infinity.

$$y = x - \tan^{-1}(x)$$

5. Determine the intervals of increasing and decreasing.
6. Relative Max and Relative Min, if any.
7. Intervals of concavity.
8. Limits at Infinity.

$$y = \tan^{-1}[\ln(x)]$$

9. Determine the intervals of increasing and decreasing.
10. Relative Max and Relative Min, if any.
11. Intervals of concavity.
12. Limits at Infinity.

$$y = \sin^{-1}\left(\frac{x}{x+1}\right)$$

13. Determine the intervals of increasing and decreasing.
14. Relative Max and Relative Min, if any.
15. Intervals of concavity.
16. Limits at Infinity.