

Derivatives of Inverse Tangent Functions

Find the derivative of each function

1. $y = \arcsin(3x)$ 2. $y = x \arctan(x-1)$ 3. $y = \arcsin \sqrt{x}$

4. $y = x^3 \arctan(1+x)$ 5. $y = \arcsin\left(\frac{1}{x}\right)$ 6. $y = \arctan(x^2 - 1)$

7. $y = \sqrt{\arccos x}$ 8. $y = \arcsin(x^2) - x \operatorname{arccot}(x+3)$

9. $y = \arccos(\arctan x)$ 10. $y = \arctan\left(\frac{1-x}{1+x}\right)$ 11. $y = \operatorname{arccot}\left(\frac{1}{x^2}\right)$

12. $y = \arctan \sqrt{x}$ 13. $y = \frac{\arctan x}{1+x^2}$ 14. $y = x^2 \arcsin(2x)$