INVERSE TRIG FUNCTIONS I
AP CALCULUS

Answers

NAME

Find the derivative of the functions.

1. $f(x) = 2\arcsin(x-1)$

$f'(x) = \frac{2}{\sqrt{2x-x^2}}$

2. $g(x) = 3\arccos\left(\frac{x}{2}\right)$

$g'(x) = \frac{-3}{\sqrt{4-x^2}}$

3. $f(x) = \arctan\left(\frac{x}{a}\right)$

$f'(x) = \frac{a}{x^2+a^2}$

4. $g(x) = \frac{\arcsin(3x)}{x}$

$g'(x) = \frac{\frac{3x}{\sqrt{1-9x^2}} - \arcsin(3x)}{x^2}$

5. $h(t) = \sin(\arccos t)$

$h'(t) = \frac{-t}{\sqrt{1-t^2}}$

6. $y = x\arccos x - \sqrt{1-x^2}$

$y' = \arccos x$

7. $y = \frac{1}{2}\left(\frac{1}{2}\ln\left(\frac{x+1}{x-1}\right) + \arctan x\right)$

$y' = \frac{1}{1-x^4}$

8. $y = x\arcsin x + \sqrt{1-x^2}$

$y' = \arcsin x$

9. $y = 8\arcsin\left(\frac{x}{4}\right) - \frac{x\sqrt{16-x^2}}{2}$

$y' = \frac{x^2}{\sqrt{16-x^2}}$

10. $y = \arctan x + \frac{x}{1+x^2}$

$y' = \frac{2}{(x^2+1)^2}$