

Inverse Trigonometric Chain Rule

Differentiate in radians. Use the arccot principal range (0, pi). Give exact factored answers.

1.

$$y = \frac{-1}{2} \cdot \arccos \left(-x^3 + \frac{1}{2} \right)$$

2.

$$y = 2 \cdot \left(-\operatorname{arccsc}(x) - 2 \right)^5$$

3.

$$y = -2 \cdot \operatorname{arcsec}(2x + 1)$$

4.

$$y = \frac{1}{2} \cdot \left(-\arctan(x) + 2 \right)^6$$

5.

$$y = 2 \cdot \operatorname{arccot} \left(-3x^3 + 1 \right)$$

6.

$$y = 3 \cdot \left(-\frac{1}{2} \cdot \arcsin(x) + 2 \right)^3$$

7.

$$y = 3 \cdot \arccos(x)^2$$

8.

$$y = \frac{1}{2} \cdot \operatorname{arccsc} \left(-\frac{1}{2}x^3 + 2 \right)$$

9.

$$y = -1 \cdot \left(\frac{3}{2} \cdot \operatorname{arcsec}(x) - 2 \right)^6$$

10.

$$y = 3 \cdot \arctan \left(\frac{3}{2}x - 2 \right)$$
