1. Find all x for which the tangent to the graph of $f(x) = \sin^{-1}(x)$ at $\left(x, f(x)\right)$ has slope 2.

2. $D_x\left[\ \sec^{-1}\left(x^3\right)\ \right] =$

3. $D_x\left[\ \left(\tan^{-1}(x)\right)^3\ \right] =$

4. An object moving on a straight line is $s(t) = t^3 - 3t^2$ feet from its starting point at time t seconds. Find its acceleration when its velocity is -3 feet per second.

1. Find all x for which the tangent to the graph of $f(x) = \sin^{-1}(x)$ at $\big(x, f(x)\big)$ has slope 5.

2. $D_x\left[\ \big(\sec^{-1}(x)\big)^4 \ \right] =$

3. $D_x\left[\ \tan^{-1}\big(x^4\big) \ \right] =$

4. An object moving on a straight line is $s(t) = 2+t+t^3$ feet from its starting point at time t seconds. Find its velocity when its acceleration is 12 feet per second per second.