Derivative Practice: Inverse Trigonometric Functions

1. If
$$k(t) = 2^{\arcsin(\sqrt{t})}$$
, then what is $k'(t)$?

2. If
$$g(p) = \frac{p^2}{3}\arctan(5p-1) + k$$
, then what is $g'(p)$?

3. If
$$f(x) = \frac{x}{\arcsin(e^x)}$$
, then what is $f'(x)$?

4. If
$$h(x) = \tan(\arctan(x))$$
, then what is $h'(x)$?