1. Find the slope of the tangent line to the graph of  $f(x) = \sin^{-1}(x)$  at the point (1/2, f(1/2)).

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

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

- 4. An ball, thrown straight, up has a height of  $s(t) = 5 + 96t 16t^2$  feet at time t seconds.
  - (a) Find the function giving the object's velocity at time t.
  - (b) At what time t does the object reach its maximum height?

1. Find the slope of the tangent line to the graph of  $f(x) = \sec^{-1}(x)$  at the point (2, f(2)).

$$2. \quad D_x \left[ \tan^{-1} \left( x^2 e^x \right) \right] =$$

$$3. \qquad D_x \left[ \frac{1}{x^2} + x \sin^{-1}(x) \right] =$$

- 4. An ball, thrown straight, up has a height of  $s(t) = 10 + 128t 16t^2$  feet at time t seconds.
  - (a) Find the function giving the object's velocity at time t.
  - (b) At what time t does the object reach its maximum height?