

(1)

$$g(t) = \sin(t) \arcsin(t)$$
$$\frac{d[g(t)]}{dt} = \cos(t) \arcsin(t) + \frac{\sin(t)}{\sqrt{1-t^2}}$$

(2)

$$h(l) = l^2$$
$$\frac{d[h(l)]}{dl} = 2l$$

(3)

$$f(x, t) = -3x + \tan(\cos(t))$$
$$\nabla f(x, t) = \begin{bmatrix} -3 \\ -(\tan^2(\cos(t)) + 1) \sin(t) \end{bmatrix}$$