In Spivak, do the following problems.

1–10, 2–1, 2–4, 2–6, 2–7, 2–11, 2–13, 2–16.

Notes: In 2–4, the function $g$ need not be continuous (which we haven’t yet defined for functions on the unit circle anyway).

Spivak’s notation differs somewhat from ours. He denotes the partial derivative $\partial f / \partial x_i$ by $D_i f$ and the total derivative $D_a f$ by $D f(a)$. He uses a distinct notation for the Jacobian matrix, denoting it by $f'(a)$. According to our convention, linear maps $\mathbb{R}^n \to \mathbb{R}^m$ are identified with matrices in $M_{m \times n}$, so the Jacobian of a differentiable $f : \mathbb{R}^n \to \mathbb{R}^m$ is identified with the total derivative $D_a f$. 