

## IB Functions Problem 011

Let  $f(x) = \cos 2x$  and  $g(x) = 2x^2 - 1$ .

- A. Find  $f_{\left(\frac{\pi}{2}\right)}$ .
- B. Find  $(g \circ f)_{\left(\frac{\pi}{2}\right)}$ .
- C. Given that  $(g \circ f)$  can be written in the form  $\cos(kx)$ , find the value of  $k$ ,  $k \in \mathbb{Z}$ .