

## Exercise 82

Let  $f(x) = x - 7$  and  $g(x) = x^2$ . Graph  $f$  and  $g$  together with  $f \circ g$  and  $g \circ f$ .

### Solution

Below is a graph of  $f(x) = \sqrt{x}$  and  $g(x) = \sqrt{1-x}$  together with their compositions,

$$f \circ g = f(g(x)) = x^2 - 7$$

$$g \circ f = g(f(x)) = (x - 7)^2 = x^2 - 14x + 49.$$

