Ex. The graph of a function *f* consists of a quarter circle

and line segments. Let *g* be the function given by

.

(a) Find .

Graph of *f*

(b) Find all values of *x* on the open interval  at which *g* has a relative maximum.

Justify your answer.

(c) Find the absolute minimum value of *g* on  and the value of *x* at which it occurs.

Justify your answer.

(d) Find the *x*-coordinate of each point of inflection of the graph of *g* on . Justify

your answer.