



2. Let  $f(x) = \int_1^x \frac{t}{\sqrt{t^4+1}} dt$ .

- (a) What is the domain of  $f$  ?
- (b) On what interval or intervals is  $f$
- (i) Increasing? (ii) Decreasing?
- (c) At what value or values of  $x$ , if any, does  $f$  have
- (i) A local maximum? (ii) A local minimum?
- (d) Find  $f''(x)$ .
- (e) On what interval or intervals is  $f$
- (i) Concave up? (ii) Concave down?
- (f) At what value or values of  $x$  does  $f$  have a point of inflection?
- (g) Sketch a possible graph of  $f$  .

