

## **STEP II, 1999, Q7**

- 7 The curve  $C$  has equation

$$y = \frac{x}{\sqrt{(x^2 - 2x + a)}},$$

where the square root is positive. Show that, if  $a > 1$ , then  $C$  has exactly one stationary point.

Sketch  $C$  when (i)  $a = 2$  and (ii)  $a = 1$ .



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