



### Examples 8.3 – Rolle's Theorem and the Mean Value Theorem

1. Show that  $f(x) = \frac{1}{2}x - \sqrt{x}$  satisfies the hypothesis of Rolle's Theorem on  $[0, 4]$ , and find all values of  $c$  in  $(0, 4)$  that satisfy the conclusion of the theorem.

**Solution:**

2. Show that  $f(x) = \sqrt{25 - x^2}$  satisfies the hypothesis of the Mean Value Theorem on  $[-5, 3]$ , and find all values of  $c$  in  $(-5, 3)$  that satisfy the conclusion of the theorem.

**Solution:**