

Quiz 12 MTH140 Fall 2025

Monday, November 17, 2025

11:12 AM

$$f(x) = 2x^2 - 5x + 2$$

find critical points:

$$f'(x) = \boxed{4x - 5 = 0}^{\text{set}}$$

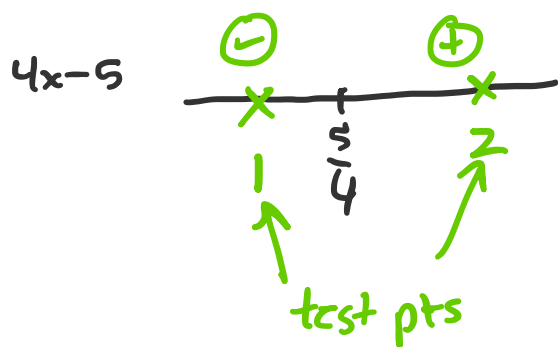


$$\boxed{x = \frac{5}{4}}$$

classify critical point

Can do one of two ways:

Way 1 (1st deriv. test)



$\Rightarrow$ local minimum occurs
at $x = \frac{5}{4}$

Way 2 (2nd deriv. test)

Compute

$$f''(x) = 4$$

so

$$f''\left(\frac{5}{4}\right) = 4 > 0$$

$\Rightarrow$ local min occurs
at $x = \frac{5}{4}$