Quiz 9 MTH 140 Fall 2026

Sunday, November 8, 2026 9:14 AM

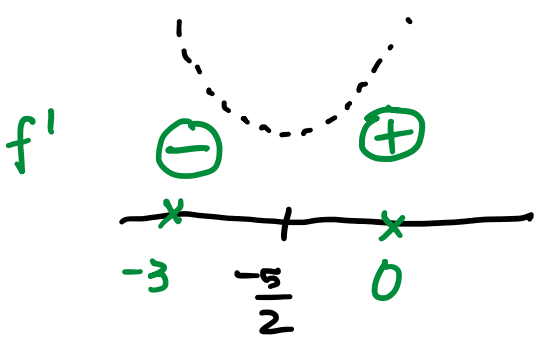
$f(x) = x^2 + 5x - 10$

$\downarrow$

$f'(x) = \boxed{2x + 5 \overset{\text{set}}{=} 0}$

$\downarrow$

$x = -\frac{5}{2}$



test pt	f'(test pt)
-3	$2(-3)+5 = -6+5 = -1 < 0$
0	$2(0)+5 = 5 > 0$

$\Rightarrow$ f has local minimum at $x = -\frac{5}{2}$ with value $f(-\frac{5}{2}) = (-\frac{5}{2})^2 + 5(-\frac{5}{2}) - 10$

$= \frac{25}{4} - \frac{25}{2} - 10$

$= \frac{25}{4} - \frac{50}{4} - \frac{40}{4}$

$= -\frac{65}{4}$