Quiz 10 MTH 140 Fall 2026

Sunday, November 8, 2026 9:18 AM

$f(x) = x^3 - 3x$, $[-1,2]$

$f'(x) = \boxed{3x^2 - 3 \overset{\text{set}}{=} 0}$

$3x^2 = 3$

$x^2 = 1$

$x = \pm 1$ ← both $+1$ and -1 lie in interval $[-1,2]$

To check for absolute extrema, we make a table:

value	f(value)
-1 (end pt)	$(-1)^3 - 3(-1) = -1+3 = 2$ ← absolute max
1 (crit pt)	$1^3 - 3 = -2$ ← absolute min
2 (end pt)	$2^3 - 3(2) = 8-6 = 2$