

Problem Definition

Problem 19. Find the absolute extrema of the function on the given closed interval.

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

Solution Step 1:

We start by computing the derivative of the function to find any critical points on the open interval $(-1, 2)$.

$$f'(x) = -2$$

Since this value is never zero and there are no discontinuities in the interval we do not have any critical points for this function.

Solution Step 2:

To compute the absolute minimum and maximum values for a continuous function on a closed interval we just need to evaluate the function at the critical points and the endpoints. This gives the following list of values.

left end point, $x = -1$	$f(-1) = 8$	absolute maximum
right end point, $x = 2$	$f(2) = 2$	absolute minimum