

Section 5.5 Absolute Extrema p.350

HW p.356 (1-25) ODD, 29, 31, 35, 43, 47

① Absolute Minimum: May - July

② Absolute Max: Sept.

③ Absolute Min: 1920

Absolute Maximum: November

Absolute Max: Aug.

Absolute Max: 1953

$f(x) = x^3 - 3x + 1$; $f'(x) = 3x^2 - 3$; $3(x^2 - 1) = 0$; $(x^2 - 1) = 0$ $x = -1, 1$ Critical #'s

⑦	x	f(x)	Comment on f(x)
EP	2	$f(2) = 3$	A. Min.
EP	4	$f(4) = 53$	A. Max

	x	f(x)	Comment on f(x)
EP	0	$f(0) = 1$	
CP	1	$f(1) = -1$	A. Min
EP	2	$f(2) = 3$	A. Max.

	x	f(x)	Comment on f(x)
EP	-2	$f(-2) = -1$	A. Min.
CP	-1	$f(-1) = 3$	A. Max.
CP	1	$f(1) = -1$	A. Min.
EP	2	$f(2) = 3$	A. Max

9. $f(x) = -2x^3 + 3x^2$; $f'(x) = -6x^2 + 6x = -6x(x-1)$; $x = 0, 1$

②

x	$f(x)$	comment on $f(x)$
$E -2$	$f(-2) = 28$	A. Max.
$E 0$	$f(0) = 0$	A. Min.

①

x	$f(x)$	comment on $f(x)$
$E 0$	$f(0) = 0$	
$C 1$	$f(1) = 1$	A. Max.
$E 2$	$f(2) = -4$	A. Min.

③

x	$f(x)$	comment on $f(x)$
-2	$f(-2) = 28$	A. Max.
0	$f(0) = 0$	
1	$f(1) = 1$	
2	$f(2) = -4$	A. Min.

①
 $f(x) = x^2 - 4x + 1$; $[-1, 1]$

$f'(x) = 2x - 4 = 2(x-2) = 0$

$C \neq$

$x-2=0$; $x=2$

$f(-1) = 6$; $f(0) = -2$; $f(1) = -2$

$\uparrow$ $\uparrow$
 A. Max. A. Min

③
 $f(x) = -x^2 + 4x - 2$

$f'(x) = -2x + 4$

$C \neq$

$-2(x-2)=0$; $x=2$

$f(0) = -2$; $f(2) = 2$; $f(3) = 1$

$\uparrow$ $\uparrow$
 A. Min A. Max