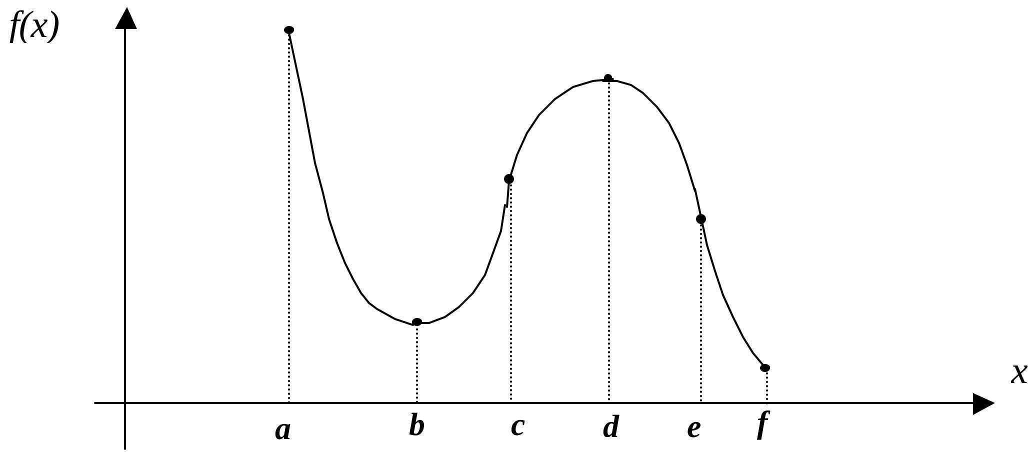
Math M119 Graphs Review Sheet

Example 1: Consider the graph *f(x)* shown below:



Relative Max at: *x* = __________ ; Relative Min at *x* = __________

Absolute Max at: *x* = __________ ; Absolute Min at *x* = __________

Critical points at: *x* = __________ ; *f* " *(x)* = 0 at: *x* = __________

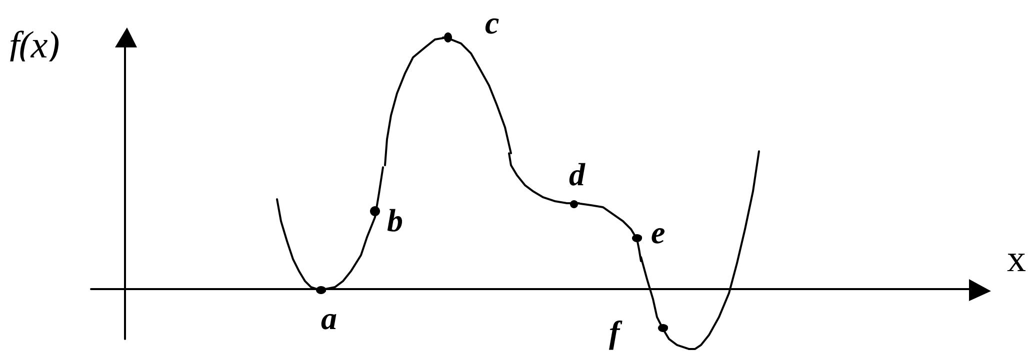
f ' *(x)* = 0 at: *x* = ______________________

f ' *(x)* > 0 at the interval of: __________________ ; *f* ' *(x)* < 0 at the interval of: __________________

f " *(x)* > 0 at the interval of: __________________ ; *f* " *(x)* < 0 at the interval of: __________________

f " *(x)* > 0 & *f* ' *(x)* = 0 at : *x* = __________ ; *f* " *(x)* < 0 & *f* ' *(x)* = 0 at : *x* = __________

Example 2: Consider the graph *f(x)* shown below:



	f is: (+ , 0 , -)	*f ' is :* (+ , 0 , -)	*f " is :* (+ , 0 , -)
a			
b			
c			
d			
e			
f			

Answers:

Please ask your instructor if you don't agree with an answer, you might be correct

Example 1:

Relative Max at: $x = d$
Relative Min at $x = b$

Absolute Max at: $x = a$
Absolute Min at $x = f$

Critical points or : $f'(x) = 0$ at: $x = b, d$
$f''(x) = 0$ (Inflection points) at: $x = c, e$

$f'(x) = 0$ (Tangent line is horizontal) at: $x = b, d$

$f'(x) > 0$ (Increasing) at the interval of: $(b < x < d)$
$f'(x) < 0$ (Decreasing) at the interval of: $(a < x < b)$ *and* $(d < x < f)$

$f''(x) > 0$ (Concave Up) at the interval of: $(a < x < c)$ *and* $(e < x < f)$
$f''(x) < 0$ (Concave Down) at the interval of: $(c < x < e)$

$f''(x) > 0$ & $f'(x) = 0$ at (local Minimum) : $x = b$
$f''(x) < 0$ & $f'(x) = 0$ at (local Maximum) : $x = d$

Example 2:

	f is: (+ , 0 , -)	*f ' is :* (+ , 0 , -)	*f " is :* (+ , 0 , -)
a	0	0	+
b	+	+	+
c	+	0	-
d	+	0	0
e	+	-	-
f	-	-	+
