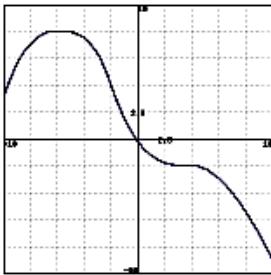




Quiz 7.2 – Graph Analysis Using First and Second Derivatives

1. (1 pt) alfredLibrary/AUCI/chapter7/lesson2/quiz-graphanalysis2pet.pg



The graph of the function f is shown above. Set up number lines and signs for f , f' , and f'' , and interpret them in terms of extrema (l. max, l. min), inflection (infl), increase/decrease/constant (inc, dec, const), and concavity (cu, cd). Choose the answers in the table that match your conclusions.

	$x < -6$	$x = -6$	$-6 < x < -2$	$x = -2$	$-2 < x < 4$	
f	[?]	[?]	[?]	[?]	[?]	[?]
	[?]		[?]			[?]
f'	[?]	[?]	[?]	[?]	[?]	[?]
	[?]		[?]			[?]
f''	[?]	[?]	[?]	[?]	[?]	[?]

2. (1 pt) alfredLibrary/AUCI/chapter7/lesson2/graphanalysis4pet.pg
Suppose that

$$f(x) = \ln(7x^2 + 5).$$

(a) Compute the first and second derivatives of f , set up number lines for each, and perform sign tests.

(b) List all critical numbers of f . If there are no critical values, enter 'NONE'.

Critical numbers = _____

(c) Use interval notation to indicate where f is increasing.
Note: Use 'INF' for ∞ , '-INF' for $-\infty$, and use 'U' for the union symbol.

Increasing: _____

(d) Use interval notation to indicate where f is decreasing.
Decreasing: _____

(e) List the x -coordinates of all local maxima of f . If there are no local maxima, enter 'NONE'.
 x values of local maxima = _____

(f) List the x -coordinates of all local minima of f . If there are no local minima, enter 'NONE'.
 x values of local minima = _____

(g) Use interval notation to indicate where f is concave up.
Concave up: _____

(h) Use interval notation to indicate where f is concave down.
Concave down: _____

(i) List the x values of all inflection points of f . If there are no inflection points, enter 'NONE'.
 x values of inflection points = _____

(j) Use all of the preceding information to sketch a graph of f . When you're finished, enter a "1" in the box below.

Graph Complete: _____