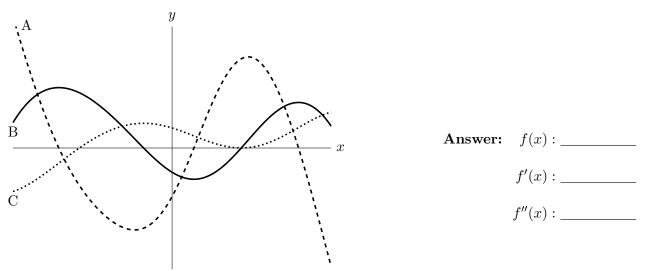
3. [4 points] Shown below are portions of the graphs of the functions y = f(x), y = f'(x), and y = f''(x). Determine which graph is which, and then, on the answer lines below, indicate after each function the letter A, B, or C that corresponds to its graph. No work or justification is needed.



4. [8 points] Suppose f(x) and g(x) are functions that have exactly the same four critical points, namely at x = 1, x = 3, x = 5, and x = 7. Note that f and g have **no other** critical points beyond these four. Assume the first and second derivatives of f(x) and g(x) exist everywhere.

The table below shows some values of f'(x) and g''(x) at certain inputs. Note that the table gives values of the **first derivative** of f(x) and the **second derivative** of g(x).

x	0	1	2	3	4	5	6	7	8
f'(x)	3	0	-1	0	1	0	2	0	?
g''(x)	?	0	-1	-4	?	0	?	2	1

a. [4 points] Use the table to classify each critical point of f as a local <u>minimum</u>, <u>maximum</u>, or <u>neither</u> of f. Circle your answer. If there is not enough information to decide, circle NEI.

i. $x = 1$ is a	LOCAL MIN of f	LOCAL MAX of f	NEITHER	NEI
ii. $x = 3$ is a	LOCAL MIN of f	LOCAL MAX of f	NEITHER	NEI
iii. $x = 5$ is a	LOCAL MIN of f	LOCAL MAX of f	NEITHER	NEI
iv. $x = 7$ is a	local min of f	LOCAL MAX of f	NEITHER	NEI

b. [4 points] Use the table to classify each critical point of g as a local <u>minimum</u>, <u>maximum</u>, or <u>neither</u> of g. Circle your answer. If there is not enough information to decide, circle NEI.

i. $x = 1$ is a	LOCAL MIN of g	local max of g	NEITHER	NEI
ii. $x = 3$ is a	LOCAL MIN of g	LOCAL MAX of g	NEITHER	NEI
iii. $x = 5$ is a	Local min of g	LOCAL MAX of g	NEITHER	NEI
iv. $x = 7$ is a	Local min of g	LOCAL MAX of g	NEITHER	NEI