1) Match each of the following graphs to the appropriate conditions for $f'$ and $f''$. Explain.

I.



$$y=f\left(x\right) $$

$$2$$

$$1$$

$$0$$

II.



$$y=f\left(x\right) $$

$$1$$

$$0$$

$$2$$

III.



$$y=f\left(x\right) $$

$$1$$

$$0$$

$$2$$

A. $f^{'}\left(x\right)>0 on \left(0, 2\right), f^{''}\left(x\right)<0 on \left(0, 1\right), f^{''}\left(x\right)>0 on \left(1, 2\right)$

B. $f^{'}\left(x\right)>0 on \left(0, 1\right), f^{'}\left(x\right)<0 on \left(1, 2\right), f^{''}\left(x\right)>0 on \left(1, 2\right), f^{''}\left(x\right)<0 on \left(1, 2\right)$

C. $f^{'}\left(x\right)>0 on \left(0, 1\right), f^{'}\left(x\right)<0 on \left(1, 2\right), f^{''}\left(x\right)>0 on \left(0, 2\right)$

D. $f^{'}\left(x\right)> 0 on \left(0, 1\right), f^{'}\left(x\right)< 0 on \left(1, 2\right), f^{''}\left(x\right)< 0 on \left(0, 2\right)$

E. $f^{'}\left(x\right)<0 on \left(0, 1\right), f^{'}\left(x\right)> 0 on \left(1, 2\right), f^{''}\left(x\right)<0 on \left(0, 1\right), f^{''}\left(x\right)> 0 on \left(1, 2\right)$

Write the letter that corresponds to the correct graph:

(I) \_\_\_\_\_\_\_\_\_\_ (II) \_\_\_\_\_\_\_\_\_\_ (III) \_\_\_\_\_\_\_\_\_\_