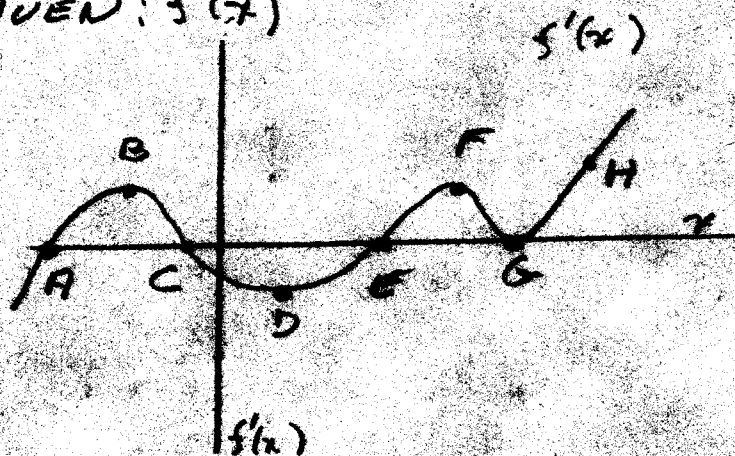


I. GIVEN: $f'(x)$



FIND:

- 1) REL MAX $\rightarrow C$
- 2) REL MIN $\rightarrow A, E$
- 3) INFLECTION POINTS \rightarrow max & min of f'

Ans:

f' $\begin{matrix} + & 0 & - \\ | & | & | \\ \hline \end{matrix}$

f' $\begin{matrix} - & 0 & + \\ | & | & | \\ \hline \end{matrix}$

\rightarrow max & min of f'

B, D, F, G

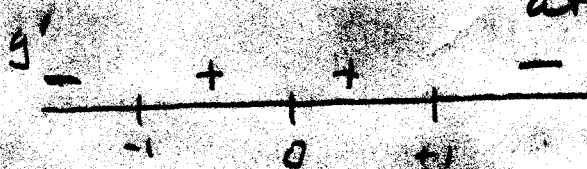
II. GIVEN: $y = 5x^3 - 3x^5$

- FIND
- 1) INTERVALS y INCREASING
 - 2) INTERVALS y DECREASING
 - 3) REL MAX / REL MIN
 - 4) INTERVALS $y'' > 0$
 - 5) INTERVALS $y'' < 0$
 - 6) INFLECTION POINTS

Ans

$$y' = 15x^2 - 15x^4 = 15x^2(1-x^2) = 0$$

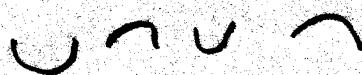
at $x=0, +1, -1$



y inc on $(-1, 1]$, decreasing elsewhere.
rel min at $x=-1$, max at $x=+1$

$$y'' = 30x - 60x^3 = 30x(1-2x^2)$$

$= 0$ at $x=0, x=\pm \frac{1}{\sqrt{2}}$



Concave up on $(-\infty, -\frac{1}{\sqrt{2}}), (0, \frac{1}{\sqrt{2}})$
and down elsewhere.