(57) $f'(x) = -2x - 10 = 0$

$x = -5$ = critical #

$f''(x) = -2$

$f''(-5) = -2 \Rightarrow$ rel. max @ $x = -5$

(59) $f'(x) = 9x^2 - 6x = 0$

$3x(3x - 2) = 0$

$x = 0 \quad x = \frac{2}{3}$ ← critical #'s

$f''(x) = 18x - 6$

$f''(0) = -6 \Rightarrow$ rel. max @ $x = 0$

$f''(\frac{2}{3}) = 6 \Rightarrow$ rel. min. @ $x = \frac{2}{3}$

(61) $f'(x) = 4(x+3)^3 = 0$

$x + 3 = 0$

$x = -3$ ← critical #

$f''(x) = 12(x+3)^2$

$f''(-3) = 0 \Rightarrow$ No Information from this, Do 1st Der. test

$-4 \quad | \quad 0$

-3

$f'(-4) = -$ $f'(0) = +$

Dec. $\longrightarrow$ Inc.

rel. min. @ $x = -3$

No rel. max.

(62) $F'(x) = \frac{7}{3}x^{4/3} + \frac{4}{3}x^{1/3} = 0$

$\frac{1}{3}x^{1/3}[7x + 4] = 0$

$x = 0 \qquad x = -\frac{4}{7}$

$f''(x) = \frac{28}{9}x^{1/3} + \frac{4}{9}x^{-2/3}$

$f''(0) = \text{DNE} \Rightarrow$ No inf. pt. $\rightarrow$

$f''\left(-\frac{4}{7}\right) = - \Rightarrow$ rel. max @ $x = -\frac{4}{7}$

rel. min @ $x = 0$