

Thursday - October 1, 2015

⑱ $f(x) = x\sqrt{x+1}$ $[-1, \infty)$

$f'(x) = \sqrt{x+1} + \frac{1}{2}x(x+1)^{-\frac{1}{2}}$

$= (x+1)^{-\frac{1}{2}} \left((x+1) + \frac{1}{2}x \right) = \frac{3}{2}x+1 = \frac{1}{2}(3x+2)$

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

$= \frac{(x+1)^{-\frac{1}{2}} [6(x+1) - (3x+2)]}{4(x+1)} = \frac{3x+4}{4(x+1)^{\frac{3}{2}}}$

$3x+4 = 0 \Rightarrow x = -\frac{4}{3}$

$4(x+1)^{\frac{3}{2}} = 0 \Rightarrow x = -1$

concave \uparrow $(-1, \infty)$

⑳ $f(x) = x^4 - 4x^3 + 2$

f



- ① A) $(-1.7, 2.7)$ max b) $-\frac{2}{3}$
 $(2, 4)$ max 10
 $(4.7, 1.5)$ inf
 $(7.5, .5)$ min

