

p. 202

#16 (a) local min $(\frac{1}{2}, -\frac{49}{4})$ (b) $(-\infty, \frac{5}{2}]$ (c) $[\frac{5}{2}, \infty)$

#18 (a) none

(b) $(-\infty, 0)$ (c) $(0, \infty)$

#20 (a) none

(b) none

(c) $(-\infty, \infty)$ #22 (a) local max $(0, 9)$ local min $(-\sqrt{5}, -16)$ and $(\sqrt{5}, -16)$ (b) $[-\sqrt{5}, 0]$ and $[\sqrt{5}, \infty)$ (c) $(-\infty, -\sqrt{5}]$ and $[0, \sqrt{5})$ #24 (a) local min $\approx (-2, -7.56)$ (b) $[-2, \infty)$ (c) $(-\infty, -2]$

#26 (a) none
 (b) none
 (c) $(-\infty, -2)$, $(-2, 2)$,
 $(2, \infty)$

#28 (a) none
 (b) $(-\infty, \infty)$
 (c) none

#15 $f(x) = 5x - x^2$

$$f'(x) = 5 - 2x$$

Find c.p. : $5 - 2x = 0$

sign chart

$$x = \frac{5}{2}$$



(a) max. @ $x = \frac{5}{2}$

(b) $(-\infty, \frac{5}{2}]$ (c) $[\frac{5}{2}, \infty)$

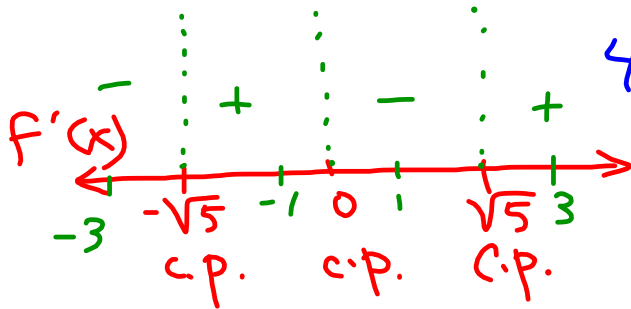
$$\#22 \quad y = x^4 - 10x^2 + 9$$

$$y' = 4x^3 - 20x = 0$$

$$4x(x^2 - 5) = 0$$

$$4x(x + \sqrt{5})(x - \sqrt{5}) = 0$$

$$x = -\sqrt{5}, 0, \sqrt{5}$$



$$(a) \text{ local min @ } -\sqrt{5}, \sqrt{5} \quad \left. \begin{array}{l} 4x(x^2 - 5) \\ \int_3 \end{array} \right| = -12(4)$$

$$\text{local max @ } 0$$

$$\#23 \quad f(x) = x\sqrt{4-x}$$

$$\text{Dom } f: x \leq 4$$

$$\text{Dom } f': x < 4$$