

$$\textcircled{7} f(x) = x\sqrt{x+4} = 0 \text{ @ } x=0, -4$$

$$\left. \begin{array}{l} f(0) = 0 \\ f(-4) = 0 \end{array} \right\} \text{ - By Rolle's Thm, } f'(x) = 0 \text{ b/w } [-4, 0]$$

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$$\textcircled{17} f(x) = \frac{x^2 - 2x - 3}{x+2}, [-1, 3]$$

$$f(-1) = \frac{1 + 2 - 3}{-1 + 2} = 0$$

$$f(3) = \frac{9 - 6 - 3}{3 + 2} = 0$$

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

$$x = \frac{-4 \pm \sqrt{16 - (-4)}}{2} = \frac{-4 \pm 2\sqrt{5}}{2} = -2 \pm \sqrt{5} \Rightarrow \textcircled{x = 0.236}$$

$$(21) f(x) = \frac{6x}{\pi} - 4 \sin^2 x, \left[0, \frac{\pi}{6}\right] \rightarrow 4(\sin x)^2$$

$$f(0) = 0 - 0 = 0$$

$$f\left(\frac{\pi}{6}\right) = \frac{6}{\pi}\left(\frac{\pi}{6}\right) - 4\left(\sin\left(\frac{\pi}{6}\right)\right)^2 = 1 - 4\left(\frac{1}{2}\right)^2 = 1 - 1 = 0$$

$$f'(x) = \frac{6}{\pi} - 8 \sin x \cos x = 0$$

$$8 \sin x \cos x = \frac{6}{\pi}$$

$$x = 0.249$$

(23) not continuous @ $x = \frac{\pi}{2}$

HW : p. 176 → 2-24 even, 33-36,
40-46 even, 73-76