①

$$\lim_{x\to 1}\frac{4x^2-7x+3}{5x^2-8x+3}=\frac{0^{\sim}}{0^{\sim}}\ \text{مبهم}=\lim_{x\to 1}\frac{(x-1)(4x-3)}{(x-1)(5x-3)}$$

$$=\lim_{x\to 1}\frac{4x-3}{5x-3}=\frac{1}{2}$$

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②

$$\lim_{x\to 0}\frac{|3x-1|-|3x+1|}{x}=\frac{0^{\sim}}{0^{\sim}}\ \text{مبهم}$$

$$0^+:\ \frac{|0^+-1|-|0^++1|}{x}=\frac{-3x+1-3x-1}{x}=-6$$

$$0^-:\ \frac{|0^--1|-|0^-+1|}{x}=\frac{-3x+1-3x-1}{x}=-6$$

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③

$$\lim_{x\to 4}\frac{x-4}{\sqrt{x}-2}=\frac{0^{\sim}}{0^{\sim}}\ \text{مبهم}\Rightarrow\frac{(\sqrt{x}-2)(\sqrt{x}+2)}{\sqrt{x}-2}=\lim_{x\to 4}\sqrt{x}+2=4$$

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④

$$\lim_{x\to 2}\frac{x-\sqrt{2x}}{2x^2-x-6}=\frac{0^{\sim}}{0^{\sim}}\ \text{مبهم}\Rightarrow\frac{x-\sqrt{2x}}{(x-2)(x+\frac{3}{2})}\times\frac{\text{ص.م}}{\text{ص.م}}=\frac{x^2-2x}{(x-2)(x+\frac{3}{2})(4)}$$

$$=\frac{x}{(x+\frac{3}{2})\times 4}=\frac{2}{14}=\frac{1}{7}$$

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⑤

$$\lim_{x\to 1}\frac{1-\sqrt{x}}{2-\sqrt{5-x}}\times\frac{\text{ص.م}}{\text{ص.م}}\times\frac{\text{ص.م}}{\text{ص.م}}=\frac{(1-x)\times 4}{(4-5+x)\times 2}=\frac{(1-x)4}{(-1+x)\times 2}=\frac{4-4x}{-2+2x}$$

$$=\frac{2(2-2x)}{-(2-2x)}=-2$$

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⑥

$$\lim_{x\to 4}\frac{\sqrt{3x+4}-4}{\sqrt[3]{5x+7}-3}=\frac{0^{\sim}}{0^{\sim}}\ \text{مبهم}\times\frac{\text{ص.م}}{\text{ص.م}}\times\frac{\text{فیل م}}{\text{فیل م}}=\frac{(3x+14-16)\times 27}{(5x+7-27)\times 8}$$

$$=\frac{(3x-12)(27)}{(5x-20)\times 8}=\frac{(x-4)\times 3\times 27}{(x-4)\times 5\times 8}=\frac{81}{40}$$

$$\lim_{x\to 1}\frac{\sqrt{3x+\sqrt{x}}-2}{\sqrt[3]{x}-1}\times\frac{\text{مرافق}}{\text{مرافق}}\times\frac{\text{مرافق}}{\text{مرافق}}=\frac{(3x+\sqrt{x}-4)\times 3}{(x-1)\times 4}$$ (6)

$$=\frac{9x+3\sqrt{x}-12}{4x-4}=\frac{3(\sqrt{x}-1)(\sqrt{x}+\frac{4}{3})}{4(\sqrt{x}-1)(\sqrt{x}+1)}=\frac{7}{8}$$

$$\lim_{x\to\pi}\frac{1+\cos^3 x}{\sin^2 x}=\frac{(1+\cos x)(1+\cos^2 x-\cos x)}{(1-\cos x)(1+\cos x)}=\frac{1+1-(-1)}{2}=\frac{3}{2}$$ (8)

$$\lim_{x\to\frac{\pi}{4}}\frac{1-\tan x}{\sin x-\cos x}=\frac{\frac{\cos x-\sin x}{\cos x}}{-(\cos x-\sin x)}=-\frac{1}{\cos x}=\frac{1}{-\frac{\sqrt{2}}{2}}=-\sqrt{2}$$ (9)

$$\lim_{x\to\frac{3\pi}{4}}\frac{\tan^2 x-1}{\cos 4x}=\frac{\frac{\sin^2 x-\cos^2 x}{\cos^2 x}}{-(\sin^2 x-\cos^2 x)}=\frac{1}{\cos^2 x}=\frac{1}{\frac{1}{4}}=-4$$ (10)