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نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۳۰ کلاس یازدهم ریاضی B .....

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$$\lim_{x\to 1}\frac{4x^2-7x+3}{3x^2-5x+2}=\frac{(4x-3)(x-1)}{(3x-2)(x-1)}=\frac{1}{2}$$ ✓

(۲)

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$$\lim_{x\to 0}\frac{-3x+1-3x-1}{x}=\frac{-6x}{x}=-6$$ ✓

(۲)

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$$\lim_{x\to 4}\frac{(\sqrt{x}-2)(\sqrt{x}+2)}{\sqrt{x}-2}=4$$ ✓

(۲)

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$$\lim_{x\to 2}\frac{x-\sqrt{3x}}{3x^2-x-6}\times\frac{x+\sqrt{3x}}{x+\sqrt{3x}}=\frac{x^2-3x}{(x-2)(3x+3)(x+\sqrt{3x})}=\frac{x(x-3)}{(x-2)(3x+3)(x+\sqrt{3x})}=\frac{2}{18}=\frac{1}{12}$$ ✓

(۲)

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$$\lim_{x\to 1}\frac{1-\sqrt{x}}{2-\sqrt{3+x}}\Rightarrow\frac{1-x}{3+x-3}\times\frac{3}{2}=\frac{-(x-1)}{(x-1)}\times 3=-3$$ ✓

(۲)

$\lim_{x\to 8} \frac{\sqrt{x+2}-3}{\sqrt[3]{x+7}-3} \times \frac{(\quad)^2}{(\quad)^2} \times \frac{(\quad)^3}{(\quad)^3} = \frac{x+2-9}{x+7-27} \times \frac{(\quad)^2}{(\quad)^3} = \frac{x-7}{x-20} \times \frac{(\quad)^3}{(\quad)^2} \Rightarrow \frac{3}{5} \times \frac{4}{3}$

$= \frac{4}{5}$ ✓

(٢) ٦

$\lim_{x\to 1} \frac{\sqrt{x+\sqrt{x}}-2}{\sqrt[3]{x}-1} \xrightarrow{\text{hop}} \frac{\frac{1+\frac{1}{2\sqrt{x}}}{2\sqrt{x+\sqrt{x}}}}{\frac{1}{3\sqrt[3]{x^2}}} = \frac{\frac{2+\frac{1}{2}}{4}}{\frac{1}{3}} = \frac{\frac{5}{2}}{\frac{1}{3}} = \frac{15}{8}$ ✓

(٢) ٧

$\lim_{x\to\pi} \frac{1+\cos^2 x}{\sin^2 x} \xrightarrow{\text{hop}} \frac{-2\cos x \sin x}{2\sin x \cos x} = \frac{-2\cos^2 x}{2\cos x} = \frac{-3}{2}$ ✓

(٢) ٨

$\lim_{x\to\frac{\pi}{4}} \frac{1-\tan x}{\sin x - \cos x} \xrightarrow{\text{hop}} \frac{-\frac{1}{\cos^2 x}}{\sin x + \cos x} = \frac{-1}{\frac{\sqrt{2}}{2}} = -\frac{2}{\sqrt{2}} = -\sqrt{2}$ ✓

(٢) ٩

$\lim_{x\to\frac{\pi}{4}} \frac{\tan^2 x - 1}{\cos(2x)} \xrightarrow{\text{hop}} \frac{2\tan x \frac{1}{\cos^2 x}}{-2\sin(2x)} = \frac{\tan x \frac{1}{\cos^2 x}}{-\sin 2x} = \frac{-1\times 2}{-(-1)} = -2$ ✓

(٢) ١٠