

نام و نام خانوادگی امیر حسین برنجی پاسخنامه تشریحی تکلیف شماره ۳۰ کلاس یازدهم

$$\lim_{x \rightarrow 1} \frac{4x^2 - \sqrt{x} + 3}{x^2 - 1x + 3} = \frac{0}{0} \rightarrow \lim_{x \rightarrow 1} \frac{(x-1)(4x-3)}{(x-1)(x+3)} = \frac{4(1)-3}{1(1)+3} = \frac{1}{4} \checkmark$$

(۲)

$$\lim_{x \rightarrow 0} \frac{|3x-1| - |3x+1|}{x} = \frac{0}{0} \rightarrow \lim_{x \rightarrow 0} \frac{-(3x-1) - (3x+1)}{x} = \frac{-3x+1-3x-1}{x} = \frac{-6x}{x} = -6 \checkmark$$

(۲)

$$\lim_{x \rightarrow 4} \frac{x^2}{\sqrt{x}-2} = \frac{0}{0} \rightarrow \lim_{x \rightarrow 4} \frac{(\sqrt{x}-2)(\sqrt{x}+2)}{\sqrt{x}-2} = \sqrt{x}+2 = 2+2 = 4 \checkmark$$

(۲)

$$\lim_{x \rightarrow 2} \frac{x - \sqrt{2x}}{2x^2 - x - 4} = \frac{2-2}{0} = \frac{0}{0}$$

$$\rightarrow \lim_{x \rightarrow 2} \frac{x - \sqrt{2x}}{2x^2 - x - 4} \times \frac{x + \sqrt{2x}}{x + \sqrt{2x}} = \frac{x^2 - 2x}{(x-2)(2x+3)(x+\sqrt{2x})} = \frac{x}{(2x+3)(x+\sqrt{2x})} = \frac{2}{14} \checkmark$$

(۲)

$$\lim_{x \rightarrow 1} \frac{1 - \sqrt{x}}{1 - \sqrt{4-x}} = \frac{0}{0} \rightarrow \lim_{x \rightarrow 1} \frac{1 - \sqrt{x}}{1 - \sqrt{4-x}} \times \frac{1 + \sqrt{x}}{1 + \sqrt{x}} \times \frac{1 + \sqrt{4-x}}{1 + \sqrt{4-x}} =$$

$$= \frac{(1-x)(1+\sqrt{4-x})}{(1-x)(1+\sqrt{x})(1+\sqrt{4-x})} = \frac{1+\sqrt{4-x}}{1+\sqrt{x}} = \frac{1+2}{1+1} = \frac{3}{2} \checkmark$$

(۲)

