

نام و نام خانوادگی: پاسخنانه تشریحی تکلیف شماره کلاس

$$\% \rightarrow \frac{x^2 - \sqrt{x} + 12}{x^2 - 11x + 10} \rightarrow \frac{\cancel{f(x) = \psi} (x - \epsilon)}{\cancel{g(x) = \psi} (x - \omega)} = \frac{\epsilon x - \psi}{\omega x - \psi} = \frac{1}{\psi} \quad x \rightarrow 1$$

1

$$0^+ \rightarrow \frac{\psi x - 1 - \psi x - 1}{x} = \frac{-2}{x} = -\infty$$

$$0^- \rightarrow \frac{1 - \psi x - \psi x - 1}{x} = \frac{-4x}{x} = -4$$

2

$$\% \rightarrow \lim_{x \rightarrow \epsilon} \frac{(\sqrt{x} - \psi)(\sqrt{x} + \psi)}{\sqrt{x} - \psi} \rightarrow \sqrt{x} + \psi \rightarrow \epsilon$$

3

$$\lim_{x \rightarrow \psi} \frac{x - \sqrt{x}}{x^2 - m - \psi} \times \frac{x + \sqrt{x}}{m + \sqrt{x}} \rightarrow \frac{x^2 - \cancel{x} \rightarrow x(x - \psi)}{(x + \psi)(x - \psi)(m + \sqrt{x})} = \frac{x}{(x + \psi)(m + \sqrt{x})} = \frac{1}{1\epsilon}$$

\downarrow
 $(x + \psi)(x - \epsilon)$

$$\lim \frac{1 - \sqrt{x}}{x - \sqrt{x} - m} \times \frac{\psi + \sqrt{x} - m}{\psi + \sqrt{x} - m} = \frac{-1}{\underbrace{\epsilon - \omega + m}} = -\psi$$

$(\sqrt{m} + 1)(\sqrt{m} + 1)$

5

$$\lim_{n \rightarrow \infty} \frac{\sqrt[4]{4n+8} - 2}{\sqrt[4]{8n+4} - 2} \times \frac{\sqrt[4]{4n+8} + 2}{\sqrt[4]{4n+8} + 2} \times \frac{\sqrt[4]{(4n+4)^2 + 9} + \sqrt[4]{8n+4}}{\sqrt[4]{(4n+4)^2 + 9} + \sqrt[4]{8n+4}}$$

$$= \frac{4n+8-4}{8n+4-4} \times \frac{2}{2} = \frac{2}{2} = 1$$

6

$$\% \rightarrow \frac{\sqrt[4]{4n+4} - 2}{\sqrt[4]{4n} - 2} \times \frac{\sqrt[4]{4n+4} + 2}{\sqrt[4]{4n+4} + 2} \times \frac{\sqrt[4]{n^2+1} + \sqrt[4]{4n}}{\sqrt[4]{n^2+1} + \sqrt[4]{4n}} \rightarrow \frac{4}{4} \times \frac{2}{2} = 1$$

7

$$\lim_{n \rightarrow \infty} \frac{(1+\cos n)(1+\cos^2 n - \cos n)}{(1-\cos n)(1+\cos n)} = \frac{1}{2}$$

8

$$\lim_{n \rightarrow \pi/2} \frac{\frac{-\cos n - \sin n}{\cos n}}{\frac{\sin n - \cos n}{\sin n - \cos n}} \rightarrow \frac{-1}{\cos n} = \frac{1}{\cos n} = \sqrt{2}$$

9

$$\lim_{n \rightarrow \infty} \frac{\tan^2 n - 1}{\cos^2 n} \rightarrow \frac{\frac{\sin^2 n}{\cos^2 n} - \frac{\cos^2 n}{\cos^2 n}}{\cos^2 n} = \frac{\sin^2 n - \cos^2 n}{\cos^2 n} = \frac{-1}{\cos^2 n}$$

$$= \frac{-1}{1/2} = -2$$

10