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

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$$\lim_{x \rightarrow 0} \frac{||x-1| - |x+1||}{x} \begin{cases} x \rightarrow 0^+ : \frac{1-x-1}{2} = \frac{-2}{2} = -1 \\ x \rightarrow 0^- : \frac{1-x-1}{x} = -1 \end{cases}$$

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$$\lim_{x \rightarrow f} \frac{x-f}{\sqrt{x}-\sqrt{f}} = \frac{0}{0} \xrightarrow{\text{رationalize}} \frac{x-f}{\sqrt{x}-\sqrt{f}} \times \frac{\sqrt{x}+\sqrt{f}}{\sqrt{x}+\sqrt{f}} = \frac{x-f}{x-f} \times f = f$$

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

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$$\frac{1 - \sqrt{x}}{\sqrt{x} - x} \times \frac{1 + \sqrt{x}}{1 + \sqrt{x}} \times \frac{x + \sqrt{x} - f}{x + \sqrt{x} - f} = \frac{1-x}{x-1} \times f = (-1) \times 2 = -2$$

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$\frac{\sqrt{\frac{12}{x} + f} - f}{\sqrt{\frac{12}{x} + v} - f} \times \frac{\sqrt{\frac{12}{x} + f} + f}{\sqrt{\frac{12}{x} + f} + f} \times \frac{\sqrt{(\frac{12}{x} + v)^2 + 9} + \sqrt{\frac{12}{x} + v}}{\sqrt{(\frac{12}{x} + v)^2 + 9} - \sqrt{\frac{12}{x} + v}} = \frac{12}{1} \times \frac{\frac{12}{x} + f - 12}{\frac{12}{x} + v - 12} = \frac{12}{1} \times \frac{\frac{12}{x} - 12}{\frac{12}{x} - 12}$ $= \frac{12}{1} \times \frac{12(x-f)}{12(x-f)} = \frac{12}{1}$	<p>8</p>
$\frac{\sqrt{\frac{12}{x} + \sqrt{x}} - 1}{\sqrt{x} - 1} \times \frac{\sqrt{\frac{12}{x} + \sqrt{x}} + 1}{\sqrt{\frac{12}{x} + \sqrt{x}} + 1} \times \frac{-\sqrt{x} + 1 + \sqrt{x}}{\sqrt{x} + 1 + \sqrt{x}} = \frac{12}{f} \times \frac{\frac{12}{x} + \sqrt{x} - f}{x - 1} = \frac{12}{f} \times \frac{(\sqrt{x} - 1)(\sqrt{x} + 1)}{(\sqrt{x} + 1)(\sqrt{x} - 1)}$ $= \left(\frac{12}{1}\right)$	<p>9</p>
$\frac{(1 + \cos x)(1 + \cos x - \cos x)}{(1 + \cos x)(1 - \cos x)} = \left(\frac{12}{1}\right)$ <p>$1 - \cos^2 x = \sin^2 x$</p>	<p>10</p>
$\frac{1 - \frac{\sin x}{\cos x}}{\sin x - \cos x} = \frac{\frac{\cos x - \sin x}{\cos x}}{\sin x - \cos x} = \frac{-1}{\cos x} = \frac{-1}{\frac{1}{\sqrt{2}}} = \frac{-1}{\sqrt{2}} = \frac{-\sqrt{2}}{2} = \left(-\frac{\sqrt{2}}{2}\right)$	<p>11</p>
$\frac{(\tan x + 1)(\tan x - 1)}{\cos^2 x - \sin^2 x} = \frac{\left(\frac{\sin x + \cos x}{\cos x}\right)\left(\frac{\sin x - \cos x}{\cos x}\right)}{(\cos x + \sin x)(\cos x - \sin x)} = \frac{-1}{\cos^2 x} = \frac{-1}{\left(\frac{1}{\sqrt{2}}\right)^2} = \left(-2\right)$	<p>12</p>