

$$\lim_{x \rightarrow 1} \frac{4x^2 - 7x + 3}{5x^2 - 11x + 3} = \frac{(x-1)(4x-3)}{(x-1)(5x-3)} = \frac{4-3}{5-3} = \boxed{\frac{1}{2}}$$

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$$\lim_{x \rightarrow 0} \frac{\overbrace{|2x-1|}^{\ominus} - \overbrace{|3x+1|}^{\oplus}}{x} = \frac{x-2x-3x+1}{x} = \frac{-4x}{x} = \boxed{-4}$$

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$$\lim_{x \rightarrow 4} \frac{x-4}{\sqrt{x}-2} = \frac{(\sqrt{x-2})(\sqrt{x+2})}{\sqrt{x-2}} = \sqrt{x+2} = \sqrt{4+2} = \boxed{\sqrt{6}}$$

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$$\lim_{x \rightarrow 2} \frac{x - \sqrt{2x}}{2x^2 - x - 4} = \frac{\sqrt{x}(\sqrt{x} - \sqrt{2})}{(x-2)(2x+2)} = \frac{\sqrt{x}(\sqrt{x} - \sqrt{2})}{(\sqrt{x} - \sqrt{2})(\sqrt{x} + \sqrt{2})(2x+2)} = \frac{\sqrt{x}}{(\sqrt{2} + \sqrt{2})(2\sqrt{2} + 2)} = \boxed{\frac{1}{14}}$$

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$$\lim_{x \rightarrow 1} \frac{1 - \sqrt{x}}{2 - \sqrt{5-x}} \times \frac{2 + \sqrt{2}}{2 + \sqrt{2}} \times \frac{2 - \sqrt{2}}{2 - \sqrt{2}} = \frac{2(1-x)}{2(2-\sqrt{2}+\sqrt{2})} = \frac{2(1-x)}{2(2)} = \boxed{-2}$$

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$$\lim_{x \rightarrow f} \frac{\sqrt{px+f} - f}{\sqrt{\Delta x + v} - v} \times \frac{f}{f} \times \frac{v}{v} = \frac{v(\sqrt{px+f} - f)}{\Delta(\Delta x + v - v)} = \frac{v \times v(\cancel{x-f})}{\Delta \times \Delta(\cancel{x-f})} = \boxed{\frac{v}{\Delta}}$$

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$$\lim_{x \rightarrow 1} \frac{\sqrt{px+\sqrt{x}} - v}{\sqrt{x} - 1} \times \frac{v}{v} \times \frac{v}{v} = \frac{v(\sqrt{px+\sqrt{x}} - v)}{v(x-1)} = \frac{v(\sqrt{x}-1)(\sqrt{px+f})}{v(\sqrt{x}-1)(\sqrt{x}+1)} = \frac{v(\sqrt{f})}{v(1+1)} = \boxed{\frac{v}{2}}$$

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$$\lim_{x \rightarrow \pi} \frac{1 + \cos^2 x}{\sin^2 x} = \frac{(1 + \cos^2 x)(1 + \cos^2 x - \cos^2 x)}{(1 + \cos^2 x)(1 - \cos^2 x)} = \frac{1 + \cos^2 \pi - \cos^2 \pi}{1 - \cos^2 \pi} = \frac{1 + (-1)^2 - (-1)}{1 - (-1)} = \boxed{\frac{v}{r}}$$

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

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$$\lim_{x \rightarrow \frac{\pi}{4}} \frac{\tan^2 x - 1}{\cos^2 x} = \frac{\frac{\sin^2 x}{\cos^2 x} - \frac{\cos^2 x}{\cos^2 x}}{\cos^2 x} = \frac{\frac{\overbrace{\cos^2 x} - (\cos^2 x - \sin^2 x)}{\cos^2 x}}{\cos^2 x} = -\frac{1}{\cos^2 x} = -\frac{1}{\left(\frac{\sqrt{2}}{2}\right)^2} = \boxed{-2}$$

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