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$$\begin{aligned} \lim_{x \rightarrow \frac{\pi}{2}} \frac{2x+3}{\eta\mu^2 x + \eta\mu x - 2} & \stackrel{\eta\mu^2 x + \eta\mu x - 2 = (\eta\mu x - 1)(\eta\mu x + 2)}{=} \lim_{x \rightarrow \frac{\pi}{2}} \frac{2x+3}{(\eta\mu x - 1)(\eta\mu x + 2)} = \\ & = \lim_{x \rightarrow \frac{\pi}{2}} \frac{2x+3}{\eta\mu x + 2} \cdot \lim_{x \rightarrow \frac{\pi}{2}} \frac{1}{\eta\mu x - 1} \stackrel{\eta\mu x - 1 \leq 0}{=} \frac{\cancel{2} \cdot \frac{\pi}{\cancel{2}} + 3}{1+2} \cdot (-\infty) = \frac{\pi+3}{3} \cdot (-\infty) = \boxed{-\infty} \end{aligned}$$