6.13 1)

α) $\lim\limits_{x\to\frac{\pi}{2}}\dfrac{2x+1}{\eta\mu x-1}=\lim\limits_{x\to\frac{\pi}{2}}(2x+1)\cdot\lim\limits_{x\to\frac{\pi}{2}}\dfrac{1}{\eta\mu x-1}=\left(\cancel{2}\dfrac{\pi}{\cancel{2}}+1\right)\cdot(-\infty)=\boxed{-\infty}$

β) $\lim\limits_{x\to0^+}\dfrac{x^2+x+1}{\sigma\upsilon\nu x}=\lim\limits_{x\to0^+}\left(x^2+x+1\right)\cdot\lim\limits_{x\to0^+}\dfrac{1}{\sigma\upsilon\nu x}=1\cdot(-\infty)=\boxed{-\infty}$

γ) $\lim\limits_{x\to0^-}\dfrac{3x-2}{\varepsilon\varphi x}=\lim\limits_{x\to0^-}\dfrac{3x-2}{\dfrac{\eta\mu x}{\sigma\upsilon\nu x}}=\lim\limits_{x\to0^-}\dfrac{(3x-2)\sigma\upsilon\nu x}{\eta\mu x}=$

$=\lim\limits_{x\to0^-}\left[(3x-2)\sigma\upsilon\nu x\right]\cdot\lim\limits_{x\to0^-}\dfrac{1}{\eta\mu x}=\left[(3\cdot0-2)\cdot1\right]\cdot(-\infty)=-2\cdot(-\infty)=\boxed{+\infty}$

6.13 2)

$\lim\limits_{x\to0}\dfrac{2x+3}{1-\sigma\upsilon\nu x}=\lim\limits_{x\to0}(2x+3)\cdot\lim\limits_{x\to0}\dfrac{1}{1-\sigma\upsilon\nu x}\overset{\sigma\upsilon\nu x\le1\Rightarrow1-\sigma\upsilon\nu x\ge0}{=}(2\cdot0+3)\cdot(+\infty)=\boxed{+\infty}$

6.13 3)

$\lim\limits_{x\to0}\dfrac{3x+1}{1-\sigma\upsilon\nu x}=\lim\limits_{x\to0}(3x+1)\cdot\lim\limits_{x\to0}\dfrac{1}{1-\sigma\upsilon\nu x}=(3\cdot0+1)\cdot(+\infty)=1\cdot(+\infty)=\boxed{+\infty}$

6.13 4)

$\lim\limits_{x\to\frac{\pi}{2}^-}\dfrac{2x^2-x}{\sigma\upsilon\nu x}=\lim\limits_{x\to\frac{\pi}{2}^-}\left(2x^2-x\right)\cdot\lim\limits_{x\to\frac{\pi}{2}^-}\dfrac{1}{\sigma\upsilon\nu x}=\left(\cancel{2}\dfrac{\pi^2}{\cancel{4}}-\dfrac{\pi}{2}\right)\cdot(+\infty)=\boxed{+\infty}$

6.13 5)

$\lim\limits_{x\to0}\dfrac{3x^2-x+2}{\sigma\upsilon\nu x-1}=\lim\limits_{x\to0}\left(3x^2-x+2\right)\cdot\lim\limits_{x\to0}\dfrac{1}{\sigma\upsilon\nu x-1}=\left(3\cdot0^2-0+2\right)\cdot(-\infty)=-\infty$

6.13 6)

$\lim\limits_{x\to\frac{\pi}{2}}\dfrac{x^2-2x}{1-\eta\mu x}=\lim\limits_{x\to\frac{\pi}{2}}\left(x^2-2x\right)\cdot\lim\limits_{x\to\frac{\pi}{2}}\dfrac{1}{1-\eta\mu x}=\left(\dfrac{\pi^2}{4}-\cancel{2}\dfrac{\pi}{\cancel{2}}\right)(+\infty)=$

$=\dfrac{\pi^2-4\pi}{4}(+\infty)\overset{\pi^2-4\pi=\pi(\pi-4)<0}{=}\boxed{-\infty}$

6.13 7)

$\lim\limits_{x\to0^-}\dfrac{x^2+x-5}{\eta\mu x}=\lim\limits_{x\to0^-}\left(x^2+x-5\right)\cdot\lim\limits_{x\to0^-}\dfrac{1}{\eta\mu x}=\left(0^2+0-5\right)\cdot(-\infty)=\boxed{+\infty}$

6.13 8)

$\lim\limits_{x\to\frac{\pi}{2}^-}(4x-1)\varepsilon\varphi x=\lim\limits_{x\to\frac{\pi}{2}^-}\dfrac{(4x-1)\eta\mu x}{\sigma\upsilon\nu x}=\lim\limits_{x\to\frac{\pi}{2}^-}\left[(4x-1)\eta\mu x\right]\cdot\lim\limits_{x\to\frac{\pi}{2}^-}\dfrac{1}{\sigma\upsilon\nu x}=$

$=\left[\left(4\dfrac{\pi}{2}-1\right)\eta\mu\dfrac{\pi}{2}\right]\cdot(+\infty)=(2\pi-1)(+\infty)=\boxed{+\infty}$

6.13 9)

$$\lim_{x\to 0^+}\left(x^2-3\right)\sigma\varphi x=\lim_{x\to 0^+}\frac{\left(x^2-3\right)\sigma\upsilon\nu x}{\eta\mu x}=\lim_{x\to 0^+}\left(\left(x^2-3\right)\sigma\upsilon\nu x\right)\cdot\lim_{x\to 0^+}\frac{1}{\eta\mu x}=$$

$$\left(0^2-3\right)\cdot 1\cdot\left(+\infty\right)=-3\cdot\left(-\infty\right)=\boxed{-\infty}$$

6.13 10)

$$\lim_{x\to\frac{3\pi^+}{2}}\frac{6x-1}{\sigma\varphi x}=\lim_{x\to\frac{3\pi^+}{2}}\frac{6x-1}{\frac{\sigma\upsilon\nu x}{\eta\mu x}}=\lim_{x\to\frac{3\pi^+}{2}}\frac{\left(6x-1\right)\eta\mu x}{\sigma\upsilon\nu x}=\lim_{x\to\frac{3\pi^+}{2}}\left[\left(6x-1\right)\eta\mu x\right]\cdot\lim_{x\to\frac{3\pi^+}{2}}\frac{1}{\sigma\upsilon\nu x}=$$

$$=\left(6\frac{3\pi}{2}-1\right)\left(-1\right)\cdot\left(+\infty\right)=\boxed{-\infty}$$

6.13 11)

$$\lim_{x\to\pi^-}\frac{2x^2-x-1}{\varepsilon\varphi x}=\lim_{x\to\pi^-}\frac{2x^2-x-1}{\frac{\eta\mu x}{\sigma\upsilon\nu x}}=\lim_{x\to\pi^-}\frac{\left(2x^2-x-1\right)\sigma\upsilon\nu x}{\eta\mu x}=$$

$$=\lim_{x\to\pi^-}\left[\left(2x^2-x-1\right)\sigma\upsilon\nu x\right]\cdot\lim_{x\to\pi^-}\frac{1}{\eta\mu x}=\left(2\cdot\pi^2-\pi-1\right)\left(-1\right)\cdot\left(-\infty\right)=\boxed{-\infty}$$