6.14 1)

α) $\lim\limits_{x\to 0^+}\dfrac{3-5\sigma\upsilon\nu^2 x}{\eta\mu x}=\lim\limits_{x\to 0^+}\left(3-5\sigma\upsilon\nu^2 x\right)\cdot\lim\limits_{x\to 0^+}\dfrac{1}{\eta\mu x}=(3-5\cdot 1)(+\infty)=-2\cdot(+\infty)=\boxed{-\infty}$

β) $\lim\limits_{x\to\frac{\pi}{2}}\dfrac{2\sigma\varphi x-\eta\mu x}{1-\eta\mu x}=\lim\limits_{x\to\frac{\pi}{2}}(2\sigma\varphi x-\eta\mu x)\cdot\lim\limits_{x\to\frac{\pi}{2}}\dfrac{1}{1-\eta\mu x}=(2\cdot 0-1)\cdot(+\infty)=-1\cdot(+\infty)=\boxed{-\infty}$

6.14 2)

$\lim\limits_{x\to 0}\dfrac{\eta\mu x-2}{\sigma\upsilon\nu x-1}=\lim\limits_{x\to 0}(\eta\mu x-2)\cdot\lim\limits_{x\to 0}\dfrac{1}{\sigma\upsilon\nu x-1}=(0-2)(-\infty)=\boxed{+\infty}$

6.14 3)

$\lim\limits_{x\to 0^-}\dfrac{3\eta\mu^2 x-5\sigma\upsilon\nu x}{\eta\mu x}=\lim\limits_{x\to 0^-}\left(3\eta\mu^2 x-5\sigma\upsilon\nu x\right)\cdot\lim\limits_{x\to 0^-}\dfrac{1}{\eta\mu x}=\left(3\cdot 0^2-5\cdot 1\right)\cdot(-\infty)=$

$=-5\cdot(-\infty)=\boxed{+\infty}$

6.14 4)

$\lim\limits_{x\to\frac{\pi}{2}}\dfrac{\sigma\upsilon\nu x-1}{2\eta\mu x-2}=\lim\limits_{x\to\frac{\pi}{2}}\dfrac{\sigma\upsilon\nu x-1}{2(\eta\mu x-1)}=\lim\limits_{x\to\frac{\pi}{2}}\dfrac{\sigma\upsilon\nu x-1}{2}\cdot\lim\limits_{x\to\frac{\pi}{2}}\dfrac{1}{\eta\mu x-1}\overset{\eta\mu x-1\le 0}{=}\dfrac{0-1}{2}\cdot(-\infty)=\boxed{+\infty}$

6.14 5)

$\lim\limits_{x\to 0}\dfrac{\varepsilon\varphi x-5}{1-\sigma\upsilon\nu x}=\lim\limits_{x\to 0}(\varepsilon\varphi x-5)\cdot\lim\limits_{x\to 0}\dfrac{1}{1-\sigma\upsilon\nu x}=-5\cdot(+\infty)=\boxed{-\infty}$

6.14 6)

$\lim\limits_{x\to\pi}\dfrac{4\varepsilon\varphi x+1}{1+\sigma\upsilon\nu x}=\lim\limits_{x\to\pi}(4\varepsilon\varphi x+1)\cdot\lim\limits_{x\to\pi}\dfrac{1}{1+\sigma\upsilon\nu x}=(4\cdot 0+1)\cdot(+\infty)=\boxed{+\infty}$

6.14 7)

$\lim\limits_{x\to\frac{3\pi}{2}}\dfrac{4\sigma\varphi x-\eta\mu x}{1+\eta\mu x}=\lim\limits_{x\to\frac{3\pi}{2}}(4\sigma\varphi x-\eta\mu x)\cdot\lim\limits_{x\to\frac{3\pi}{2}}\dfrac{1}{1+\eta\mu x}=\left(4\cdot 0-(-1)\right)\cdot(+\infty)=\boxed{+\infty}$