Evaluate the following limits:

a) $\lim_{x\to 0^+} 7x\ln(3x)$ $= \lim_{x\to 0^+} \frac{7\ln(3x)}{\frac{1}{x}}$, $\frac{-\infty}{\infty}$

$0 \cdot -\infty$

$= \lim_{x\to 0^+} \frac{\frac{7}{3x}\cdot 3}{-\frac{1}{x^2}} = \lim_{x\to 0} -7x = 0.$

b) $\lim_{x\to\infty} \dfrac{5\ln x}{\ln\left(2x^2+3x\right)}$ → ∞ , ∞ / ∞ =

∞

$$\lim_{x\to\infty} \frac{\frac{5}{x}}{\frac{1}{2x^2+3x}\cdot(4x+3)} = \lim_{x\to\infty} \frac{5(2x^2+3x)}{x(4x+3)}$$

$$= \lim_{x\to\infty} \frac{10x^2+15x}{4x^2+3x} = \lim_{x\to\infty} \frac{20x+15}{8x+3}$$

$$= \lim_{x\to\infty} \frac{20}{8} = \boxed{\frac{5}{2}}$$