

$$\lim_{x^2+y^2+z^2 \rightarrow +\infty} (x+y+z) \arctan(yz)$$

$$(x, y, z) \in D$$

$$D = \{(x, y, z) \in \mathbb{R}^3 : x \geq 1, 0 \leq y \leq z \leq 1/x\}$$

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$$0 \leq (x+y+z) \operatorname{ARCTAN}(yz) \leq 3x \operatorname{ARCTAN} \frac{1}{x^2}$$

$\leadsto 0 \quad x \geq 1/x \geq y, z \quad \leadsto 0 \quad \left(\frac{1}{x}\right)^2 \geq y \cdot z$
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$$3x \operatorname{ARCTAN} \frac{1}{x^2} = \frac{3}{x} \frac{\operatorname{ARCTAN} \frac{1}{x^2}}{\frac{1}{x^2}} \rightarrow 0$$