Limites

$$\lim_{x \to \infty} \left(\frac{1}{x^2} \cdot x \right) =$$

0	∞	Autre

Limites

$$\lim_{x \to 0} \left(\frac{1}{x^2} \cdot x \right) =$$

0	∞	*Autre*

$$\lim_{x \to \infty} \left(x^2 \cdot \frac{1}{x} \right) =$$

∞	0	Autre

$$\lim_{x \to 0} \left(x^2 \cdot \frac{1}{x} \right) =$$

∞	0	Autre

$\lim_{x \to 0} \frac{1}{x^2} = \lim_{x \to 0} \frac{1}{x} \times \frac{1}{0} = \text{"} \frac{1}{0} \text{"}$

- $\lim_{x \to 0^+} \frac{1}{x} = \text{"} \frac{1}{0^+} \text{"} = +\infty$
- $\lim_{x \to 0^-} \frac{1}{x} = \text{"} \frac{1}{0^-} \text{"} = -\infty$

$\Big\} \neq$

donc n'existe pas

$\lim_{x \to \infty} \frac{x}{x^2}$ car $= \lim_{x \to \infty} \frac{1}{x}$

$= \text{"} \frac{1}{\infty} \text{"}$

$= 0$

0

Car :

$\lim_{x \to 0} \frac{x^2}{x} = \lim_{x \to 0} x$

$= 0$

0

Car :

$\lim_{x \to \infty} \frac{x^2}{x} = \lim_{x \to \infty} x$

$= \infty$

∞

Limite

$$\lim_{x\to\infty}\left(x\cdot\frac{1}{x}\right)=$$

∞	0	Autre

Limite

$$\lim_{x\to 0}\left(\frac{1}{x}\,.\,x\right)=$$

∞	0	Autre

Limite 4 ème

$$\lim_{x\to\infty}\left(x\cdot e^{-x}\right)=$$

∞	0	Autre

Limite 4 ème

$$\lim_{x\to\infty}\left(e^{x}\cdot\frac{1}{x}\right)=$$

∞	0	Autre

Autre :

1

car :

$$\lim_{x \to 0} \frac{x}{x} = \lim_{x \to 0} 1$$

$$= \boxed{1}$$

Autre :

1

car :

$$\lim_{x \to \infty} \frac{x}{x} = \lim_{x \to \infty} 1$$

$$= \boxed{1}$$

∞

car :

$$\lim_{x \to \infty} \frac{e^x}{x} = \frac{\infty}{\infty}$$

$$= \lim_{x \to \infty} \frac{e^x}{1} = \frac{\infty}{1}$$

$$= \boxed{\infty}$$

↑ thm de l'Hospital

0

car :

$$\lim_{x \to \infty} \frac{x}{e^x} = \frac{\infty}{\infty}$$

$$= \lim_{x \to \infty} \frac{1}{e^x} = \frac{1}{\infty}$$

$$= \boxed{0}$$

↑ thm de l'Hospital

Limite 4 ème

$$\lim_{x \to -\infty} (x \cdot e^x) =$$

0	∞	Autre

Limite 4 ème

$$\lim_{x \to \infty} (x \cdot e^x) =$$

0	∞	Autre

Limite

$$\lim_{x \to \infty} \frac{x+2}{2x+3} =$$

0	∞	Autre

Limite

$$\lim_{x \to 1} \frac{x-1}{x^2-1} =$$

0	∞	Autre

∞

car:

$$\lim_{x \to +\infty} (x \cdot e^x) = "\infty \cdot \infty" = \boxed{\infty}$$

0

$$\lim_{x \to -\infty} (x \cdot e^x) = "-\infty \cdot 0" = \lim_{x \to -\infty} \frac{x}{e^{-x}} = "\frac{-\infty}{\infty}" \overset{\text{th. H.}}{=} \lim_{x \to -\infty} \frac{1}{-e^{-x}} = "\frac{1}{-\infty}" = \boxed{0}$$

$\frac{1}{2}$

car:

$$\lim_{x \to 1} \frac{x-1}{x^2-1} = "\frac{0}{0}" \overset{\text{th H.}}{=} \lim_{x \to 1} \frac{1}{2x} = \boxed{\frac{1}{2}}$$

$$\lim_{x \to \infty} \frac{x+2}{2x+3} = "\frac{\infty}{\infty}" \overset{\text{th. H.}}{=} \boxed{\frac{1}{2}}$$

$\frac{1}{2}$

Limite 4 ème

$$\lim_{x\to\infty}\left(\frac{1}{x}\cdot\ln(x)\right)=$$

0	∞	Autre

Limite 4 ème

$$\lim_{x\to\infty}\left(\frac{1}{\ln(x)}\cdot x\right)=$$

Autre	∞	0

Limite

$$\lim_{x\to 2}\frac{x-2}{(x-2)^2}=$$

∞	0	Autre

Limite

$$\lim_{x\to\infty}\frac{x-2}{(x-2)^2}=$$

∞	0	Autre

∞

Car: $\lim_{x\to\infty} \frac{x}{\ln(x)} = \frac{\infty}{\infty}$

$= \lim_{x\to\infty} \frac{1}{\frac{1}{x}}$ ↑ th H.

$= \lim_{x\to\infty} x = \infty$

0

Car: $\lim_{x\to\infty} \frac{\ln(x)}{x} = \frac{\infty}{\infty}$

$= \lim_{x\to\infty} \frac{\frac{1}{x}}{1} = \frac{1}{\infty}$ ↑ th H

$= \boxed{0}$

0

Car: $\lim_{x\to\infty} \frac{x-2}{(x-2)^2} = \frac{\infty}{\infty}$

$= \lim_{x\to\infty} \frac{1}{2(x-2)} = \frac{1}{\infty}$ ↑ th. H.

$= \boxed{0}$

n'existe pas

Car: $\lim_{x\to 2} \frac{x-2}{(x-2)^2} = \frac{0}{0}$

$= \lim_{x\to 2} \frac{1}{2(x-2)} = \frac{1}{0}$ ↑ th. H.

- $\lim_{x\to 2^-} \frac{1}{2(x-2)} = \frac{1}{0^-} = -\infty$
- $\lim_{x\to 2^+} \frac{1}{2(x-2)} = \frac{1}{0^+} = +\infty$

} ≠

Limite 4 ème

$$\lim_{x\to\infty}\left(x^2\cdot\frac{1}{\ln(x)}\right)=$$

0	∞	Autre

Limite 4 ème

$$\lim_{x\to\infty}\left(\frac{1}{x^2}\cdot\ln(x)\right)=$$

0	∞	Autre

$$\lim_{x\to\infty} \frac{\ln(x)}{x^2} = \frac{\infty}{\infty}$$

$$= \lim_{x\to\infty} \frac{\frac{1}{x}}{2x}$$

↑ th H.

$$= \lim_{x\to\infty} \frac{1}{2x^2} = \frac{1}{\infty} = \boxed{0}$$

$$\lim_{x\to\infty} \frac{x^2}{\ln(x)} = \frac{\infty}{\infty}$$

$$= \lim_{x\to\infty} \frac{2x}{\frac{1}{x}}$$

↑ th H.

$$= \lim_{x\to\infty} 2x^2 = \boxed{\infty}$$