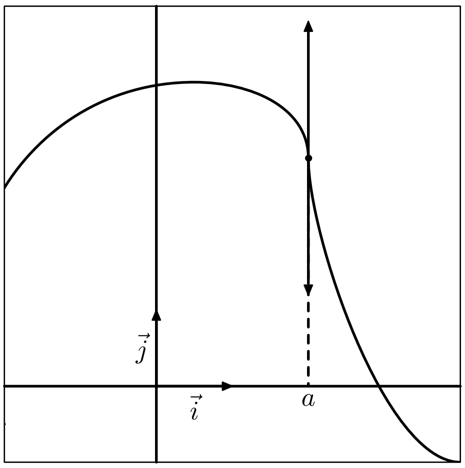
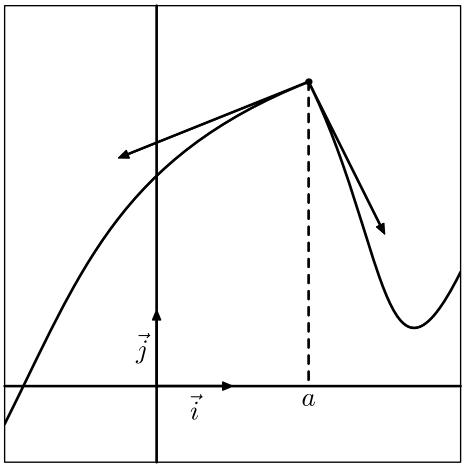


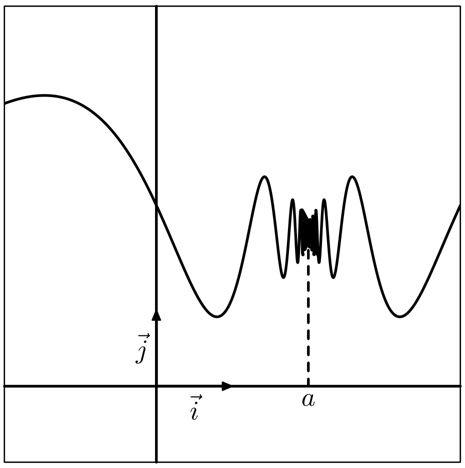
$\mathscr{C}_f$ admet une **tangente verticale** au point d'abscisse a

$$\lim_{x\mapsto a}\frac{f(a+h)-f(a)}{h} = +\infty \text{ (ou } -\infty\text{)}$$



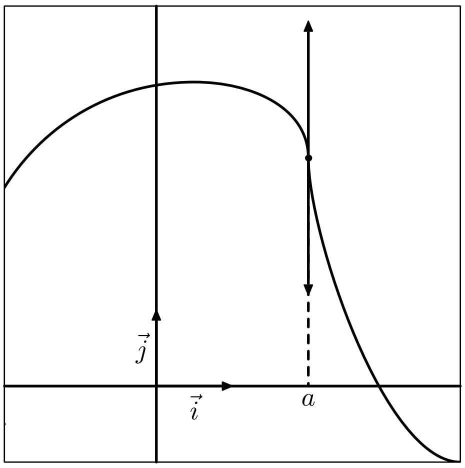
$\mathscr{C}_f$ admet deux **demi-tangentes**

$$\lim_{x\mapsto a^-}\frac{f(a+h)-f(a)}{h} \neq \lim_{x\mapsto a^+}\frac{f(a+h)-f(a)}{h}$$



$\mathscr{C}_f$ n'admet aucune tangente

$$\lim_{x\mapsto a}\frac{f(a+h)-f(a)}{h} \text{ n'existe pas}$$



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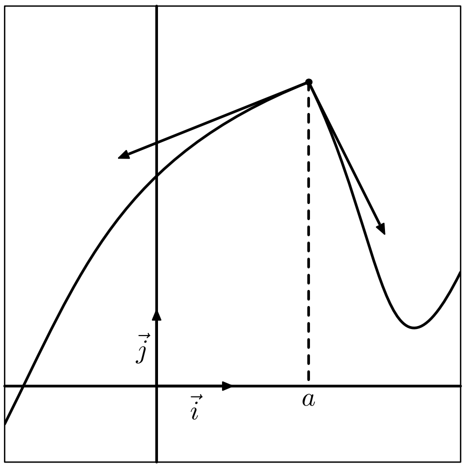

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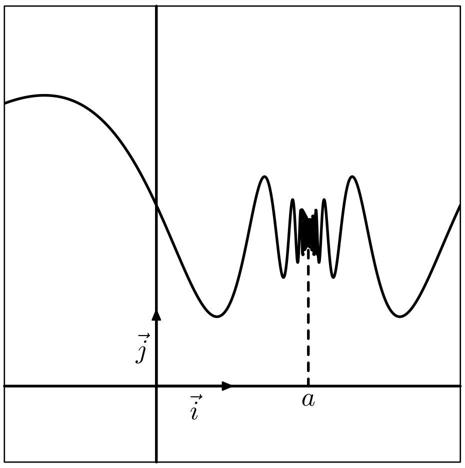

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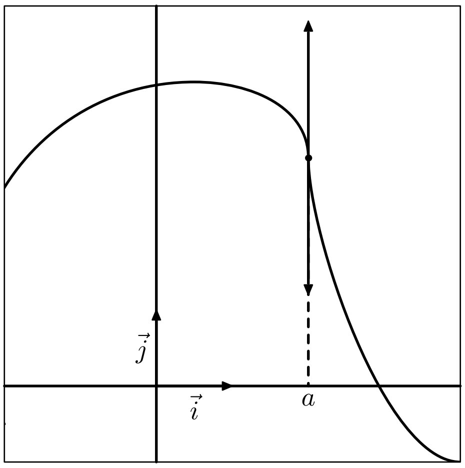

$\mathscr{C}_f$ admet une **tangente verticale** au point d'abscisse a

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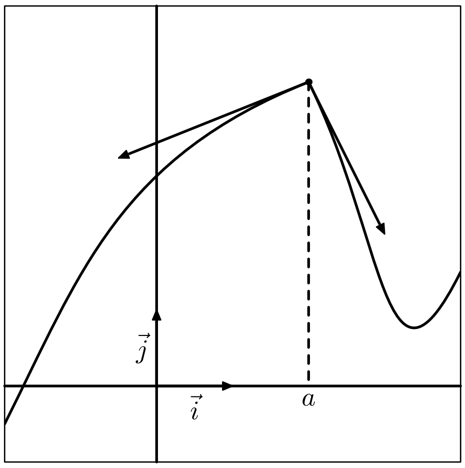

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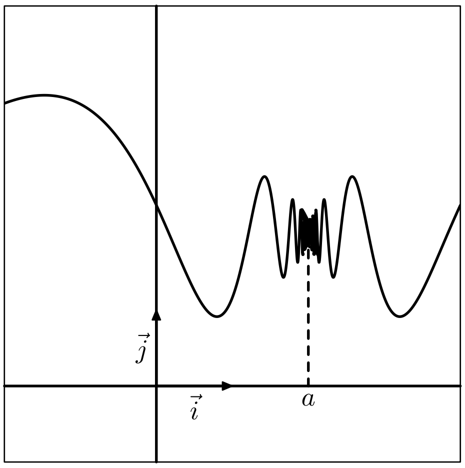

$\mathscr{C}_f$ n'admet aucune tangente

$$\lim_{x\mapsto a}\frac{f(a+h)-f(a)}{h} \text{ n'existe pas}$$