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nonincreasimg
[MTH341] A function <br>(f: E rightarrow $R \backslash$ ) defined on a set $\backslash(E$ ssubset $R \backslash$ ) is said to be
$\qquad$ on $E$ if $\backslash\left(\right.$ ( forall $x \_1, x \_2$ in ( $x \_1<x \_2$ Rightarrow $f\left(x \_1\right)<f\left(x \_2\right)$ )).
increasing
[MTH341] Let $\backslash(f: R$ rightarrow $R \backslash)$ be a function defined as $f(x)=\backslash\left(x^{\wedge} n \backslash f o r a l l \mid x\right.$ in $\left.R \backslash\right)$
where $n$ is a fixed positive integer. What is the differentiability of $f$ at any point $\backslash(x$ in $R$.
1)?
$f^{\prime}(x)=\backslash\left(n x^{\wedge}\{n-1\} \backslash\right)$
[MTH341] Let a function $f$ be defined on an interval I. If $f$ is derivable at a point $\backslash(\mathrm{c}$ in I) , then it is $\qquad$ at c .
continuous
[MTH341] Let $f$ be a real function defined on an open interval $[a, b]$. Let $c$ be a point of this interval so that $\mathrm{a}<\mathrm{c}<\mathrm{b}$. The function f is said to bedifferentiable at the point $\mathrm{x}=\mathrm{c}$ if $\qquad$ exists and is finite.
$\backslash \overline{(\lim x \text { rightarrow }} \mathrm{c} \backslash \operatorname{frac}\{\mathrm{f}(\mathrm{x})-\mathrm{f}(\mathrm{c})\}\{\mathrm{x}-\mathrm{c}\} \backslash)$
[MTH341] A function <br>(f: E rightarrow $R \backslash$ ) defined on a set $\backslash(E$ ssubset $R \backslash)$ is said to be on $E$ if $\backslash\left(\right.$ lforall $x \_1, x \_2$ lin ( $x \_1<x \_2 \backslash$ Rightarrow $\left.f\left(x \_1\right)>f\left(x \_2\right)\right)$ ).
$\overline{\text { decreasing }}$
[MTH341] Let $\backslash(f: R$ rightarrow $R \backslash$ ) be defined as $f(x)=x$ for $\backslash(0$ leq $x<1 \backslash)$ and $f(x)=1$ for $\backslash(x \operatorname{geq} 11)$. When is $f(x)$ continuous?
$\mathrm{x}=1$
[MTH341] Let $\backslash(f: R$ rightarrow $R$ ) be defined as $f(x)=x$ for $\backslash(0$ leq $x<1 \backslash)$ and $f(x)=1$ for $\backslash(x \operatorname{lgeq} 1 \backslash)$. When is $f(x)$ not derivable?
$\mathrm{x}=1$
[MTH341] What is the intervals in which the function $f$ defined on $R$ by $f(x)=\backslash\left(2 x^{\wedge} 3-\right.$ $30 x^{\wedge} 2+144 x+7$ \forall $x$ lin $R$ ) is decreasing?
[4, 6]
[MTH341] What is the intervals in which the function $f$ defined on $R$ by $f(x)=\backslash\left(2 x^{\wedge} 3-\right.$ $30 x^{\wedge} 2+144 x+7$ \forall $x$ lin R1) is increasing?
<br>(J-linfty, 4] and [6, linfty[)

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