_____ on E if $\forall x_1, x_2 \in (x_1 < x_2 \Rightarrow f(x_1) \geq f(x_2))$.
nonincreasimg

[MTH341] A function $f: E \rightarrow R$ defined on a set $E \subset R$ is said to be _____ on E if $\forall x_1, x_2 \in (x_1 < x_2 \Rightarrow f(x_1) < f(x_2))$.
increasing

[MTH341] Let $f : R \rightarrow R$ be a function defined as f(x) = $x^n \forall x \in R$ where n is a fixed positive integer. What is the differentiability of f at any point $x \in R.$?
f'(x) = nx^{n-1}

[MTH341] Let a function f be defined on an interval I. If f is derivable at a point $c \in I$, then it is _____ 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 a < c < b. The function f is said to bedifferentiable at the point x = c if____ exists and is finite.
$\lim x \rightarrow c \frac{f(x) - f(c)}{x - c}$

[MTH341] A function $f: E \rightarrow R$ defined on a set $E \subset R$ is said to be _____ on E if $\forall x_1, x_2 \in (x_1 < x_2 \Rightarrow f(x_1) > f(x_2))$.
decreasing

[MTH341] Let $f: R \rightarrow R$ be defined as f(x) = x for $0 \leq x < 1$ and f(x) = 1 for $x \geq 1$. When is f(x) continuous?
x = 1

[MTH341] Let $f: R \rightarrow R$ be defined as f(x) = x for $0 \leq x < 1$ and f(x) = 1 for $x \geq 1$. When is f(x) not derivable?
x = 1

[MTH341] What is the intervals in which the function f defined on R by f(x) = $2x^3 - 30x^2 +144x + 7 \forall x \in R$ is decreasing?
[4, 6]

[MTH341] What is the intervals in which the function f defined on R by f(x) = $2x^3 - 30x^2 +144x + 7 \forall x \in R$ is increasing?
$]-\infty, 4]$ and $[6, \infty[$