Lecture 20:

Arithmetic II

Politeness in Correspondence

Arithmetic II

function *[fankšən]:*

example:
f(x) → *the function of the variable x*

derivative *[di'rivətiv] – derivace* → *an expression representing the rate of change of a function with respect to an independent variable*

example:

$$\frac{df(x,y)}{dx}$$

-- the partial ['pa:šəl] derivative **of** f(x,y) **with** respect **to** x

Arithmetic II

derive *[di'raiv] – odvodit → obtain a function or equation from another by a sequence of logical steps (e.g. by differentiation)*

integral *[intəgrəl] – integrál → a function of which a given function is a derivative (which may express the area under the curve of a graph of the function)*

example:

$\int f(x)dx$

-- the indefinite integral **of** f **with** respect **to** x

Arithmetic II

logarithm *[logəriðəm] – logaritmus*

example:
log x
-- common logarithm of x

$\log_a x$
-- logarithm (base a) of x

sine *[sain],* ***cosine*** *[kəusain],* ***tangent*** *[tændžənt],* ***cotangent*** *[kəu'tændžənt]*

sine *– calculated as a ratio of the side opposite a given angle to the hypotenuse*
-- sine x, cosine x, tangent x, cotangent x

Arithmetic II

example:
sin x, cos x, tg x, cotg x

|a| - the ***absolute value*** *of a*
remainder *[ri'meində] - zbytek*
quantity *[kwontiti] – veličina*

matrix *[meitrix], pl.* ***matrices*** *[meitrisi:z] – matice → a rectangular array of quantities or expressions in rows and columns that is treated as a single entity and manipulated according to particular rules*

Σ – sum [sam] → suma

Arithmetic II

Combinatorics [kəmbi:nə'to:riks]**:**

The binomial [bai'nəumiəl] coefficient [kəui'fišənt] of the natural number n and the integer k is the number of combinations that exist.

The binomial coefficient of *n* and *k* is often read as "*n choose k*".

Arithmetic II

$$\binom{n}{k} = \frac{n \cdot (n-1) \cdots (n-k+1)}{k \cdot (k-1) \cdots 1} = \frac{n!}{k!(n-k)!} \quad \text{if } n \geq k \geq 0$$

where n is the number of objects from which you can choose and k is the number to be chosen.

Politeness in Correspondence

Example of a poorly composed message:

Hi teacher,

I want the point for the question I wrote correctly.

Bye

Petr Balík Balíkovič

Politeness in Correspondence

Example of a correctly composed message:

Dear Sir/Madam,

I am sending this message with regard to your e-mail of April 2, 2007, where you say I might be awarded one more point for a question in my test I may have answered correctly. I wonder if you would be so kind as to check the test and make sure the question has been evaluated properly.

Thank you.

Yours faithfully

Daniel Kultivovaný

Politeness in Correspondence

Example of a correctly composed message:

Dear Mr. Dvořák,

do you think you could check my answer sheet and possibly award me one more point for the question you mentioned at today's lecture? I am writing this e-mail since I am not completely sure of what alternatives I have selected for the question.

Thank you.

Yours sincerely (Best regards, Kind regards, Regards, All the best, Best wishes, ...)

Petra Poloformální

Politeness in Correspondence

The principal rules to remember:

i. *Always reply to any e-mail you receive letting the sender know you have received it and you have not ignored its contents. You should do so even if it were in the form of a simple 'Allright' note.*

ii. *Beware of the person who does not reply to your e-mail despite receiving it since there is always a problem to surface in the future!! That is, such a person is likely to turn out slapdash, boorish, conceited, complacent, or having any other negative trait that might eventually get you in trouble!!*

Homework

Specialist Reading:

- Computing Support
- Raiding Hard Drives

End of Lecture Series