

科学技術英語2C

第4回

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文法用語

<http://www.alse-net.com/column/grammar-terms.htm>

品詞 part of speech / word class

名詞 noun

代名詞 pronoun

動詞 verb

他動詞 transitive verb

自動詞 intransitive verb

助動詞 auxiliary verb

形容詞 adjective

副詞 adverb

前置詞 preposition

接続詞 conjunction

間投詞 interjection

冠詞 article

不定冠詞 indefinite article

定冠詞 definite article

疑問詞 interrogative / interrogative word / question word

單數形 singular
複數形 plural
可算名詞 countable noun
不可算名詞 uncountable noun
所有格 the possessive case of ...

省略形
 abbreviation (pl. → plural)
 acronym (ADSL → asymmetric digital subscriber line)

原級 positive / positive degree
比較級 comparative / comparative degree
最上級 superlative / superlative degree

動詞の原形 verb root

過去形 past form

過去分詞 past participle

三人称 third person

三人称単数現在 third person singular

規則変化の動詞 verb with regular conjugation / regular verb

不規則変化の動詞 verb with irregular conjugation / irregular verb

不定詞 infinitive

動名詞 gerund

現在分詞 present participle

句動詞 phrasal verb/ cf, idiom

句読点 punctuation
ピリオド period
カンマ comma
クエスチョンマーク question mark
感嘆符！ exclamation mark
コロン： colon
セミコロン； semicolon
アポストロフィー ' apostrophe
引用符 " quotation mark

時制 tense
現在形 present tense / present form
過去形 past tense / past form
現在進行形 present continuous tense / present progressive tense
未来形 future tense / future form
現在完了形 present perfect tense / present perfect form
過去進行形 past progressive tense / past progressive form
未来進行形 future continuous tense / future continuous form
現在完了進行形 present perfect continuous tense / present perfect continuous form
過去完了形 past perfect tense / past perfect form
未来完了形 future perfect tense / future perfect form

文 sentence
主語 subject
目的語 object
補語 complement
能動態 active voice → 最近のはやり
受動態 passive voice → 10年くらい前までののはやり
肯定文 affirmative sentence / positive sentence
否定文 negative sentence
疑問文 interrogative sentence / question sentence
感嘆文 exclamatory sentence
命令文 imperative sentence
句 phase
節 clause
名詞句 nominal phrase / noun phrase
名詞節 nominal clause / noun clause
形容詞句 adjectival phrase / adjective phrase
形容詞節 adjectival clause / adjective clause
関係代名詞 relative pronoun
分詞構文 participial construction
直接話法 direct speech
間接話法 indirect speech
時制の一致 sequence of tenses → 科学英語では例外が多い
Newton proved that the momentum of a system is always conserved if external net force is absent.
仮定法 subjunctive mood (科学英語では reductio ad absurdum, reduction to absurdity で用いる)
仮定法過去 past subjunctive
仮定法過去完了 subjunctive past perfect
条件節 conditional clause / clause of condition

1.4 添え字 (suffix), 累乗

a' a prime

$\overline{a}$ a bar

$\hat{a}$ a hat/ a wedge

a_i a sub i

a^i a super i

7^2 seven squared

5^3 five cubed / five to the thi

x^n x to the n th power/ x to

a^2 a squared

a^3 a cubed/ a to the third po

a^n a to the n th power/ a to t

a^{-n} a to the minus n th powe

$a^{1/2}$ a to (the) half power/ t

$a^{1/3}$ the cube root of a

$a^{1/n}$ the n th root of a

$\sqrt{2}$ the square root of two

1.5 加法・減法・乗法・除法 (他) (addition, subtraction, multiplication, division etc.)

$a - b$ a minus b

$a + b$ a plus b

$a \pm b$ a plus minus b / a plus or minus b .

$a \mp b$ a minus or plus b .

$ab, a \times b$ a times b / a multiplied by b

$a \cdot b$ a dot b

$a \div b$ a divided by b

a/b a over b

$a : b$ the ratio of a to b

$a!$ a factorial / factorial a

$\binom{n}{a}$ binomial n over a / binominal coefficient n over a

$1 \cdots 5$ one to five

$1 + 3 + 5 + \cdots$ one plus three plus five dot dot dot

$a(b + c)$ a times the sum of b plus c / a open parenthesis b plus c close parenthesis ²

数式の書き方

- 変数は斜体(イタリック, italic), 数字は立体(upright)
- 添え字(サフィックス, suffix)は
 - 変数だったら斜体
 - 人名など意味があるものから来ていれば立体

$x + iy, ij,$

e^x, e

dx, dx

x, a, k_B, T_c, f_x

数式に句読点を入れる。(punctuation)

rotational motion

- unit of rotational speed: revolutions per minute, RPM
- tangential speed=radical distance x rotational speed, $v=r\omega$
- speed vs. rotational speed
- mass vs. what? --> rotational inertia, moment of inertia
- force vs. torque=lever arm x force
- momentum vs. angular momentum

speed	angular frequency
mass	moment of inertia
force	torque
momentum	angular momentum

Calculation (p.156, p. 160)

次回授業の最初に集める

- Calculate the torque produced by a 50-N perpendicular force at the end of the 0.2m-long wrench.
- Calculate the tension in a string that whirls a 2-kg toy in a horizontal circle of radius 2.5m when it moves at 3 m/s.
- How much greater is the angular momentum of the Earth orbiting about the Sun than the Moon orbiting about the Earth?

words

- center of mass (CM)
- center of gravity
- centripetal force
- centrifugal force
- reference frame, frame of reference
 - rotating reference frame

conservation law of angular momentum

- If no external net torque acts on a rotating system, the angular momentum of that system remains constant. (p.151)
 - An object or system of objects will maintain its angular momentum unless acted upon by an external net torque.

外部から正味のトルク(偶力)が回転系に働いていなければ、その系の角運動量は一定である。

— 物体、あるいは複数の物体からなる系は、外部からの正味のトルク(偶力)が働かない限り、その角運動量を保持する。

学籍番号

氏名

quiz

- What is the tangential speed of a passenger on a Ferris wheel that has a radius of 20m and rotates once in 300 s?
- Write down the conservation laws you learned so far.