



UNIVERSITY OF
LINCOLN

PROFESSIONAL SKILLS AND GROUP STUDY

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AIMS

- TALK ABOUT PLAGIARISM/COLLUSION
- ETHICAL CODE OF PRACTICE OF UNIVERSITY
- UNIVERSITY REGULATIONS AND PROCEDURE IN CASE OF COLLUSION
- TOOLS AVAILABLE TO IDENTIFY PLAGIARISM OR COLLUSION

UNIVERSITY CODE OF ETHICS

- THE UNIVERSITY HAS DEVELOPED THIS CODE OF ETHICS TO RECORD THE WAYS IN WHICH INDIVIDUALS AT LINCOLN, THROUGH THEIR PERSONAL RELATIONSHIPS, ACTIVITIES AND CONDUCT, CREATE AND SUSTAIN A COMMUNITY THAT EXEMPLIFIES THE UNIVERSITY'S VALUES.

ETHICAL BEHAVIOUR AND ACADEMIC OFFENCE.

- YOU CAN ACCESS THE UNIVERSITY CODE OF ETHICS [HERE](#).
- THE RESEARCH OF PRACTICE: [HERE](#)

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ACADEMIC OFFENCE

What is an Academic Offence?

The following are examples:

- i **Collusion:** A student colludes when they submit work for assessment done in collaboration with another person as entirely their own work or collaborates with another student to complete work which is submitted as that other student's work. Collusion does not apply in the case of the submission of group projects, or assessments that are intended to be produced collaboratively.
- ii **Plagiarism:** Plagiarism is the passing off of another person's thoughts, ideas, writings, or images as one's own. A student commits plagiarism when they incorporate in their own work unacknowledged portions of another person's material or attempts to pass off such work as original through its inclusion. Poor scholarly practice may justify trivial instances of failure to acknowledge source material.
- iii **Self-plagiarism:** Self-plagiarism is the re-submission in whole or in part, without proper acknowledgement, of any work by the student for which credit has already been claimed as part of the same or another award.
- iv **Misleading material:** Inclusion of data which has been invented or obtained by unfair means. This includes passing off of data from previous studies as if conducted by the student or by offering incentives to another person to provide material or otherwise to assist in producing work for assessment.
- v **Cheating:** Any irregular behaviour during live assessments such as the unauthorised possession of notes; the copying of another candidate's work; the use of programmable calculators and other equipment when this has been forbidden; the unauthorised obtaining of examination papers. Cheating also covers the use of any form of communication (whether verbal or electronic) between students during live assessments in order to gain an unfair advantage.
- vi **Contract Cheating:** The outsourcing of assessment work, in whole or in part, to any third party, whether a commercial provider, current or former student, or acquaintance or family member.
- vii **Misconduct in Research:** The fabrication or falsification of data; misrepresentation of data and/or interests and or involvement, or the failure to follow accepted procedures or to exercise due care in carrying out responsibilities for avoiding unreasonable risk or harm to research subjects or participants or the environment. This would also include improper handling of privileged or private information on individuals collected during the research.

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PLAGIARISM

- THE HISTORY OF MATHEMATICS DEALS WITH THE ORIGIN OF DISCOVERIES IN MATHEMATICS AND THE MATHEMATICAL METHODS AND NOTATION OF THE PAST. BEFORE THE MODERN AGE AND THE WORLDWIDE SPREAD OF KNOWLEDGE, WRITTEN EXAMPLES OF NEW MATHEMATICAL DEVELOPMENTS HAVE COME TO LIGHT ONLY IN A FEW LOCALES. FROM 3000 BC THE MESOPOTAMIAN STATES OF SUMER, AKKAD AND ASSYRIA, FOLLOWED CLOSELY BY ANCIENT EGYPT AND THE LEVANTINE STATE OF EBLA BEGAN USING ARITHMETIC, ALGEBRA AND GEOMETRY FOR PURPOSES OF TAXATION, COMMERCE, TRADE AND ALSO IN THE PATTERNS IN NATURE, THE FIELD OF ASTRONOMY AND TO RECORD TIME AND FORMULATE CALENDARS.
- THE EARLIEST MATHEMATICAL TEXTS AVAILABLE ARE FROM MESOPOTAMIA AND EGYPT – PLIMPTON 322 (BABYLONIAN c. 2000 – 1900 BC), THE RHIND MATHEMATICAL PAPYRUS (EGYPTIAN c. 1800 BC) AND THE MOSCOW MATHEMATICAL PAPYRUS (EGYPTIAN c. 1890 BC). ALL OF THESE TEXTS MENTION THE SO-CALLED PYTHAGOREAN TRIPLES, SO, BY INFERENCE, THE PYTHAGOREAN THEOREM SEEMS TO BE THE MOST ANCIENT AND WIDESPREAD MATHEMATICAL DEVELOPMENT AFTER BASIC ARITHMETIC AND GEOMETRY. [1]



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COLLUSION

Student A

Page 2

Q2.

$$\frac{dQ}{dV} = \frac{2}{r \sin\theta}$$

$$Q = \int \rho dV$$

$$= \int \frac{2}{r \sin\theta} \rho_0^2 dr d\theta d\phi = 2 \int_0^R r dr \int_0^\pi d\theta \int_0^{2\pi} d\phi$$

$$= 2 \cdot \left[\frac{r^2}{2} \right]_0^R \cdot \left[\theta \right]_0^\pi \cdot \left[\phi \right]_0^{2\pi} = 2\pi^2 R^2$$

$$R = 200\text{mm} \quad Q = 2 \cdot \pi^2 \cdot (200 \times 10^{-3})^2 = 0.79 \text{C}$$

Student B

$$\frac{2}{r \sin\theta} \cdot \frac{dQ}{dV} = \frac{2}{r \sin\theta}, \quad Q = \int r_0 dV$$

$$Q = \int \frac{2}{r \sin\theta} \rho_0^2 dr d\theta d\phi$$

$$= 2 \int_0^R r dr \int_0^\pi d\theta \int_0^{2\pi} d\phi$$

$$= 2 \times \left[\frac{r^2}{2} \right]_0^R \times \left[\theta \right]_0^\pi \times \left[\phi \right]_0^{2\pi}$$

$$= 2 \times \frac{r^2}{2} \times \pi \times 2\pi$$

WHAT HAPPENS IF I COLLUDE

- THE MEMBER OF STAFF WILL IDENTIFY THE CASE COLLUSION / PLAGIARISM CASE
- THE WORK WILL BE ANALYZED BY A PANEL
- YEAR 1-YEAR 2 INTERNAL PANEL
 - POSSIBLE OUTCOMES:
 - REDO THE COURSEWORK
 - WARNING
- YEAR 3 AND YEAR 4 IS AN UNIVERSITY PANEL
 - REDO THE COURSEWORK/ASSESSMENT
 - FAILURE OF THE MODULE

COLLUSION AND PLAGIARISM ADVICE



Don't cheat



If you write a report or essay
keep record of the sources
and give credit to the sources.



Cite your references



Use turnitin



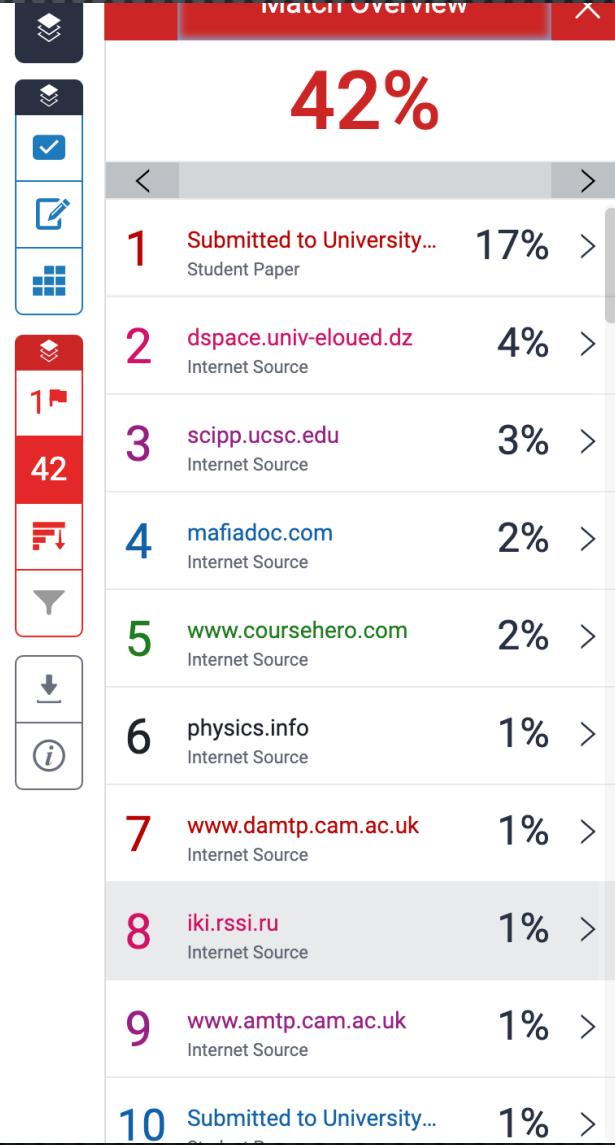
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Kolmogorov-Arnold-Moser (KAM) theory is the theory of perturbations of quasi-periodic motions of Hamiltonian and related systems for infinite time intervals. The difference between periodic and quasi-periodic motions, is that a periodic motion looks like a circle and involves one frequency only, whereas quasi-periodic motion involves more than one frequency. In fact, when talking about KAM theory it involves n frequencies, which is equal to the degrees of freedom in the system we are looking at.

3.3.1 Unperturbed Motion

We consider an unperturbed integrable Hamiltonian system with Hamiltonian $H_0(I)$. Its phase space is foliated into the invariant tori $I = \text{constant}$. The motion on a torus is conditionally periodic with frequency vector $\omega(I) = \frac{\partial H_0}{\partial I}$.

A torus on which the frequencies are rationally independent is said to be **non-resonant**. A trajectory fills such a torus everywhere densely. This is important because if, for example, we have an integrable system which has 2 degrees of freedom, it means that $n = 2$ and we have the following frequencies ω_1 and ω_2 . Then we can consider two conditions:

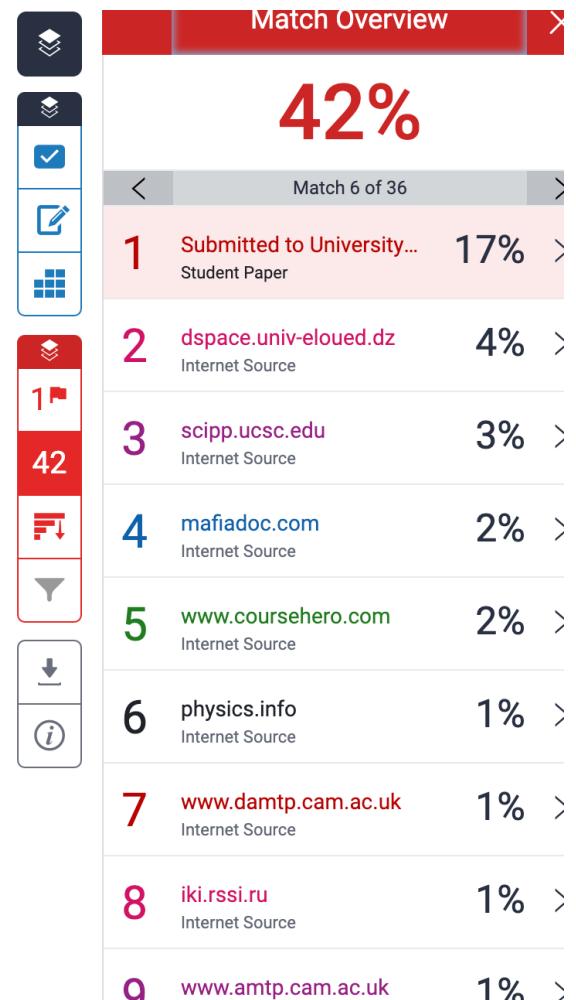
a for $\omega_1 = (\text{integer multiple}) \times \omega_2 \rightarrow$ then we obtain a trajectory that is

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specifically integrable systems. - Mathematical Aspects of Classical and Celestial Mechanics [3], this book will be used for Chapter 6 - Perturbation Theory for Integrable Systems. More specifically **Kolmogorov-Arnold-Moser (KAM) theory**, which is the theory of perturbations of conditionally periodic motions of Hamiltonian and related systems in the large for infinite time intervals. - Nonlinear Differential Equations and Dynamical Systems - The Poincaré

The unperturbed system is said to be non-degenerate if its frequencies are functionally independent:





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ime intervals. The
riodic motion looks
lic motion involves
eory it involves n
we are looking at.

hich follows from the heuristic averaging principle and formal integration procedures. 6.3.1 Unperturbed Motion. Non-Degeneracy Conditions We recall the basic concepts relating to integrable systems. We consider an unperturbed integrable Hamiltonian system with Hamiltonian $H_0(I)$. Its phase space is foliated into the invariant tori $I = \text{const}$. The motion on a torus is conditionally periodic with frequency vector $\omega(I) = \partial H_0 / \partial I$. A torus on which the

6.3.1 Unperturbed Motion

4

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