

# Tom's to-do list

## Guides alluded to in materials but no files exist yet

- Rationalizing the denominator (priority, Max)
- Multiple revolutions and negative angles
- Arithmetic on complex numbers (Charlotte)
- Factorization
- Even and odd functions
- Trigonometry and integration
- Solving simultaneous equations (priority, Ollie)
- Rearranging with factorization and reciprocals
- Finding lines and angles using trigonometry
- Inverse trigonometric functions
- Introduction to probability
- Discrete and continuous random variables
- Introduction to integration
- Properties of integration
- Introduction to probability distributions
- Overview of numbers
- Straight lines
- Errors in hypothesis testing

## Guides wanted

### Maths

- Introduction to derivatives and the limit definition (tdhc drafting 10/24)
- Proof sheet: Derivatives of common functions from first principles
- Product rule (tdhc drafting 10/24)
- Chain rule (tdhc drafting 10/24)
- Quotient rule (tdhc drafting 10/24)
- Introduction to integration
- The Fundamental Theorem of Calculus
- Integration by substitution

- Integration by parts
- Factorials and the binomial coefficient
- Injective and surjective functions

## Stats

- Fact sheet: Differentiation for statisticians
- Fact sheet: Integration for statisticians
- Introduction to probability
- Conditional probability and Bayes' Theorem
- Intro to random variables
- PMFs and PDFs (Sophie C)
- Central limit theorem
- Introduction to hypothesis testing (Ellie)
- The normal distribution
- (Guides on distributions)
- Fact sheet: Discrete random variables versus continuous random variables
- What is a p-value? (AL)

## Guides for which files exist in some guise

### Arithmetic and algebra

| Topic                               | Link to guide | Link to questions | Link to answers |
|-------------------------------------|---------------|-------------------|-----------------|
| Introduction to quadratic equations | done          | cat               | cat             |
| Completing the square               | done          | cat               | cat             |
| The quadratic formula               | done          | cat               | cat             |
| Laws of indices                     | done          | cat               | cat             |
| Solving exponential equations       | done          | cat               | cat             |
| Introduction to logarithms          | done          | cat               | cat             |
| Sigma notation                      | done          | cat               | cat             |
| Rearranging equations               | done          | cat               | cat             |
| Further sigma notation (DRAFT)      | write         | write             | write           |

| Topic                     | Link to guide         | Link to questions     | Link to answers       |
|---------------------------|-----------------------|-----------------------|-----------------------|
| Rearranging trig and logs | <a href="#">split</a> | <a href="#">split</a> | <a href="#">split</a> |

## Angles and trigonometry

| Topic                        | Link to guide        | Link to questions   | Link to answers     |
|------------------------------|----------------------|---------------------|---------------------|
| Radians                      | <a href="#">done</a> | <a href="#">cat</a> | <a href="#">cat</a> |
| Introduction to trigonometry | <a href="#">done</a> | <a href="#">cat</a> | <a href="#">cat</a> |
| Trigonometric identities     | <a href="#">done</a> | <a href="#">cat</a> | <a href="#">cat</a> |

## Vectors

| Topic                              | Link to guide        | Link to questions   | Link to answers     |
|------------------------------------|----------------------|---------------------|---------------------|
| Introduction to vectors            | <a href="#">done</a> | <a href="#">cat</a> | <a href="#">cat</a> |
| Addition and scalar multiplication | <a href="#">done</a> | <a href="#">cat</a> | <a href="#">cat</a> |
| The scalar product                 | <a href="#">done</a> | <a href="#">cat</a> | <a href="#">cat</a> |

## Factsheets

| Topic           | Link to factsheet   |
|-----------------|---------------------|
| Laws of indices | <a href="#">cat</a> |
| Greek letters   | <a href="#">cat</a> |

## Proof sheets

| Topic             | Link to proof sheet |
|-------------------|---------------------|
| Quadratic formula | <a href="#">cat</a> |
| Scalar product    | <a href="#">cat</a> |

| <b>Topic</b>                 | Link to proof<br>sheet |
|------------------------------|------------------------|
| Trigonometric identities     | under<br>construction  |
| Properties of sigma notation | under<br>construction  |