

MAS152: Essential Mathematical Skills & Techniques

Prof Koji Ohkitani

mas-engineering@sheffield.ac.uk

Monday 26th September 2016, 2pm
St George's Church

About the course

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- work on exercises from exercise sheets in your own time.

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Course website

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Timetable

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Past papers for the exam will be made available nearer the time.

Video lectures and online tests

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You won't receive any reminders: it's your responsibility to log in twice a week and watch the videos and do the tests!

In order to help you settle in, we have extended the first deadline to this Friday at 11pm.

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We recommend you log in and attempt the tests as soon as possible (preferably today!).

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Problem classes

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Exercises

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Full-class lectures

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Calculators

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Reading week

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Engagement

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- use the discussion board for extra help.

Syllabus, Weeks 1–4

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Functions, such as $f(x) = x^2$ or $g(x) = e^x$, take an input number, x , and assign an output, $f(x)$, according to a given rule. Functions are fundamental to mathematics, so we'll start with the basic definitions and terms (such as domain and range) used when discussing them.

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In Week 4 we will move on to *differentiation*.

Activity

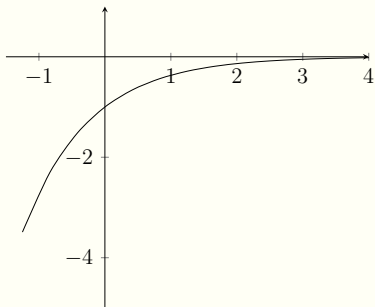
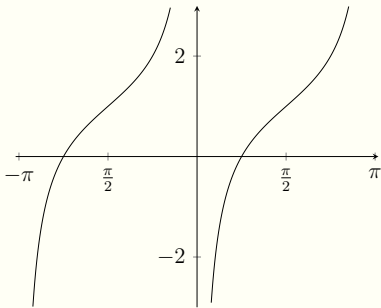
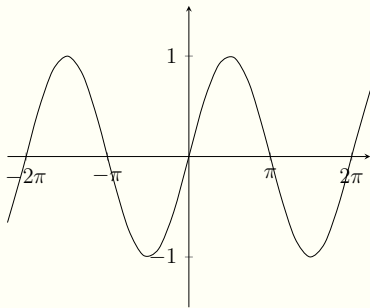
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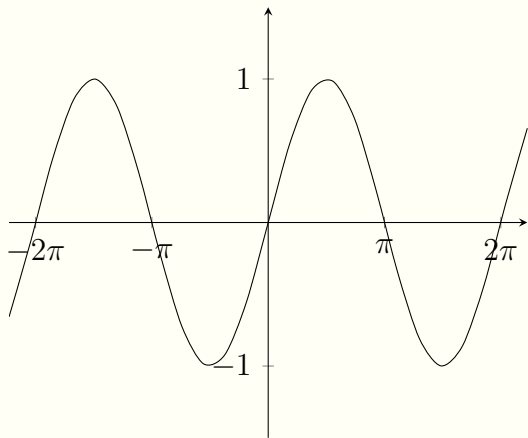
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Once you have identified the functions, discuss any understanding you have of the terms *domain*, *range*, *odd*, *even*, *periodic*, and *continuous* which appeared in the earlier slides.

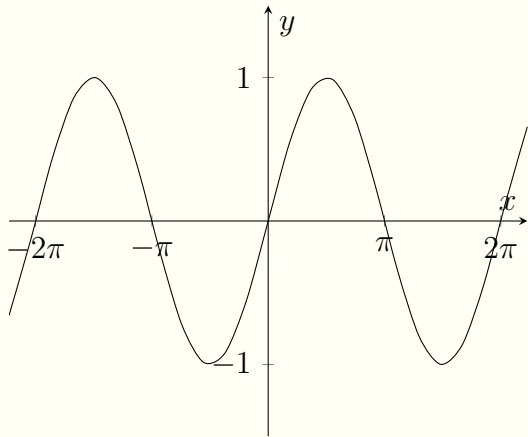


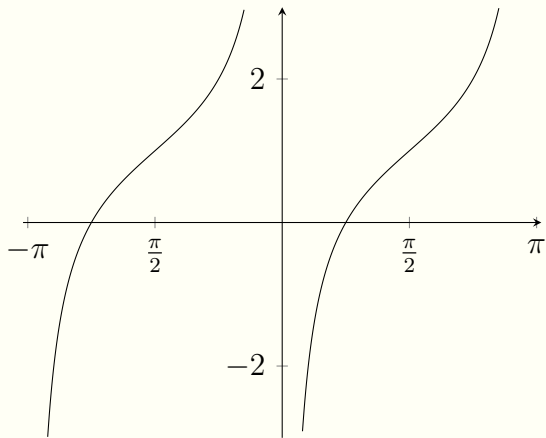
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Answers

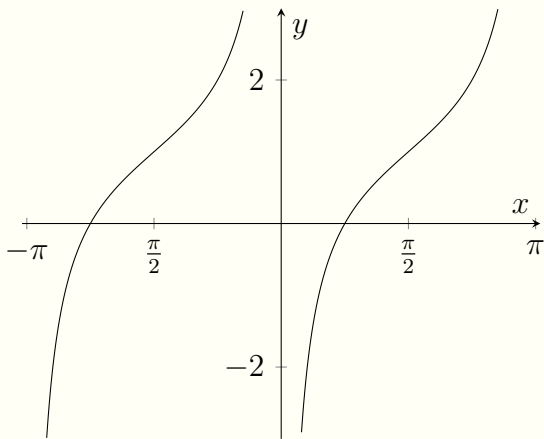


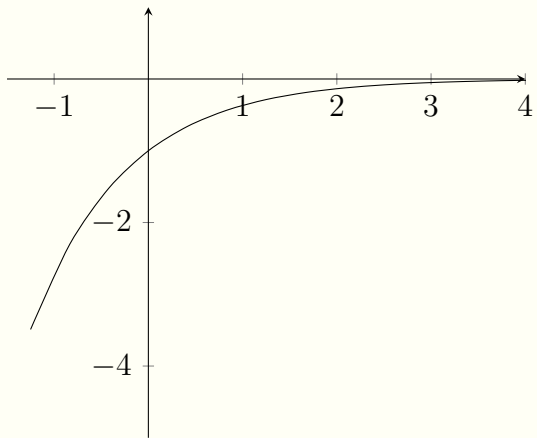
$$y = \sin x$$



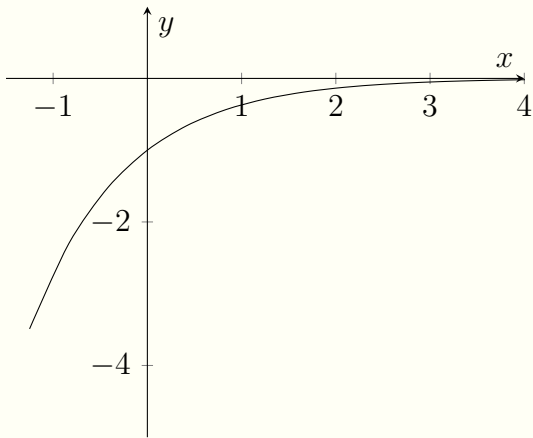


$$y = \tan\left(x - \frac{\pi}{2}\right) + 1$$





$$y = -e^{-x}$$



Reminders

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I hope you enjoy the first few weeks of the course.