wqe | Wyggeston & Queen Elizabeth I College

Year 10 Taster Activity
A Level Mathematics

WQE is one of the largest sixth form providers in England; a large twin-site college, centrally located in the city of Leicester. The College's most recent Ofsted inspection was in 2024 where we received a Grade 2 (Good) for Overall Effectiveness.

WQE aims to develop young professionals to be qualified to Level 3 and ready to progress to Level 4. We recognise that our students join us from a diverse range of backgrounds and are responsive to individual needs to support all students in a successful transition from school to Post-16 education.

We actively encourage you start engaging with us at this early opportunity, to consider your subject choices and ensure you are in the best possible position to be prepared for making your Post-16 choices at the start of Year 11.

The task outlined below will give you an idea of what this Level 3 course involves. We welcome you to have a try and develop your understanding of the subject. You may wish to talk to Curriculum Staff about this during our Open Day in November or at other opportunities during the Admissions process.

Graph Sketching

Being able to sketch graphs and recognising the shape of graphs is required at A level maths. See if you can answer the following questions.

There is a very useful graphs sketching website https://www.desmos.com/calculator to help you investigate graphs

amsp Sketching Other Graphs 1

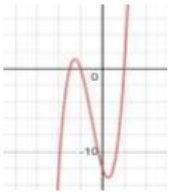
1. What is the mathematical name for the graph of $y = \frac{1}{x}$?

2. What are the maximum and minimum values for the graph $y = cos\theta$?

3. Sketch the graph of $y = 2^x$.
Label the y and x intercepts

4. Using a sketch of the graphs
$y = \frac{1}{x}$ and $y = x$
show how many solutions there will be to the equation $\frac{1}{x} = x$

5. What is the name for this type of graph?



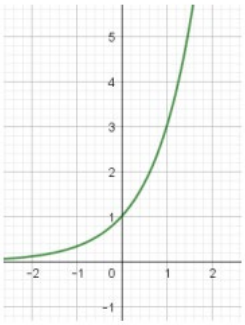
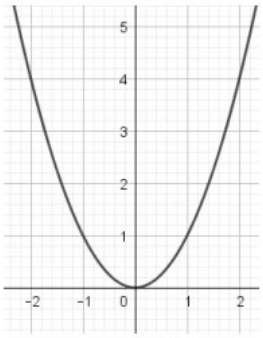
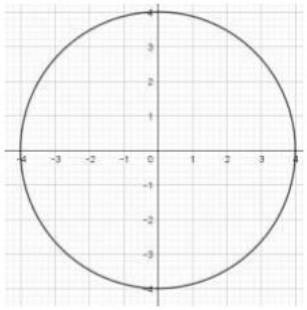
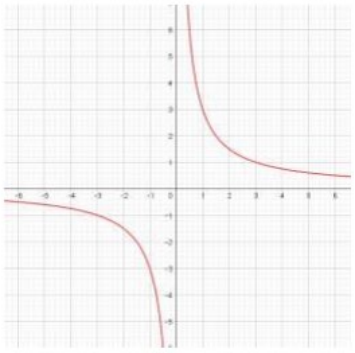
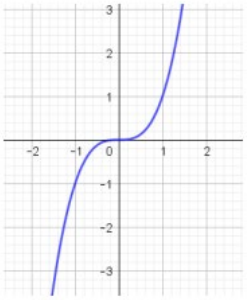
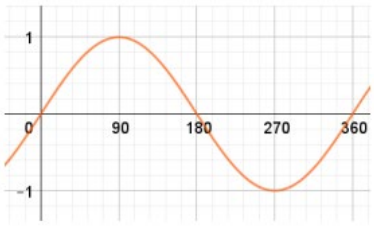
6. What is the y intercept of the graph
$y = (x + 2)(x - 3)(x + 5)$?

7. What are the x intercepts of the graph
$y = (x + 2)(x - 3)(x + 5)$?

8. Sketch the graph of
$y = (x - 3)(x + 2)(x + 5)$

Which is which?

Match the graphs to the equations There are more equations than you need!

- $y = 3^x$
- $y = \frac{3}{x}$
- $y = sin\theta$
- $y = 2x^2$
- $y = tan\theta$
- $y^2 + x^2 = 16$
- $y = x^2$
- $y = x^3$
- $y = \frac{1}{x}$
- $y = x^2 + 3$

A cubic match up

Which one of the equations below describes the graph?

- $y = (x + 1)(x - 1)(x - 2)$
- $y = -x(x - 1)(x + 1)$
- $y = x(x - 1)(x + 1)$

For more resources https://amsp.org.uk/teachers/11-16-maths/transition-to-level-3-maths/