

Delegate Booklet
Course Title:
International GCSE/Advanced Level
Teaching and Learning Strategies for
Mathematics

Course Code: YMA01-20IF1

About this event

Course Title: Pearson Edexcel International GCSE/Advanced Level Teaching and Learning Strategies for Mathematics

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Aims and Objectives of the event

Delegates will:

- learn from analysis of how students have performed in examinations
- identify those areas of learning which students have found most challenging
- discuss the implications of that analysis for teaching and learning strategies
- be introduced to a range of teaching and learning strategies particularly applicable to mathematics
- discuss strategies for optimising the learning of students in mathematics
- network, discuss best practice and share ideas with other teachers.



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Agenda

Time	Item
9.30	Welcome Tea & Coffee
10:00	Welcome & Introductions. Aims and Objectives Pearson as a leading Awarding and training body.
10:10	How an examination assesses student performance
11: 25	Break & Networking activity
11:40	What students do in Edexcel maths examinations
12:10	What students need to do to raise achievement
1:00	Lunch
2:00	Improving student readiness and preparation for exams
2:30	How to do problem solving and carry out proofs
3:00	Organising teaching to raise achievement
3:50	Final questions and leave



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Activity 1 - Ranking exam questions in terms of demand

Purpose:

To improve knowledge of factors that influence demand in maths questions

Activity 2 - Using a mark scheme to mark real examples of work

Purpose:

To improve knowledge of mark schemes and their use

Activity 3 - Make a list of common errors that students make

Purpose:

To improve knowledge of common errors that students make and to begin to think how to help students avoid them

Activity 4 - Use of calculator in mathematics examinations

Purpose:

To improve knowledge of use that modern calculators can be put to: possible classroom uses



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Activity 5 - Investigating what long term memory requirements examination questions need.

Purpose:

To improve knowledge of the facts, techniques and concepts that students need to know in an examination

Activity 6 - How to plan answers to multi-step examination questions

Purpose:

To improve knowledge of metacognition can lead to successful problem solving

Activity 7 - List issues and constraints on organising teaching

Purpose:

To improve knowledge of constraints and factors that affect maths departments and to share ideas of how to work with them



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Task 1 For use with slide 32

Q6

6.(a)	Sets $4x + c = x(x - 3)$ and attempts to write as a 3TQ Uses $b^2 = 4ac$ for their $x^2 - 7x - c = 0$ Correct equation $49 = -4c$ or $49 + 4c = 0$ $c = -12.25$ oe
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$$x(x - 3) = 4x + c$$

$$x^2 - 3x = 4x + c$$

$$x^2 - 7x - c = 0$$

$$(-7)^2 - 4c = 0$$

$$c = 49/4$$

.....

(b)	Attempt to solve $x^2 - 7x - c = 0$ with their c Attempt to find the y coordinate for their x coordinate $\left(\frac{7}{2}, \frac{7}{4}\right)$ oe	M1 dM1 A1
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$$x^2 - 7x - 49/4 = 0$$

$$x = 8.45$$

$$y = 8.45(8.45 - 3) = 46.1$$



Problem solving exemplar 1

A circle, centre $C(1, 1)$, touches both axes, as shown in Fig. 1. AB is a tangent to the circle. The triangle OAB is isosceles.

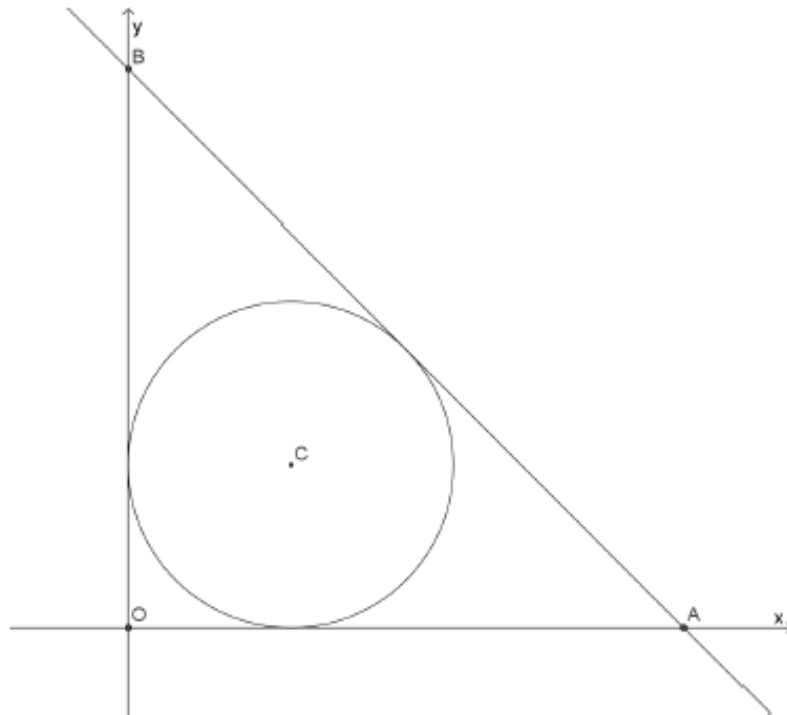


Fig. 1

Find the equation of AB , giving your answer in exact form.

[8]



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Second example from presentation

A curve is defined by the parametric equations

$$x = 3 + 2t, \quad y = 2 - \frac{3}{t}$$

Find the value of t at the point where the normal to the curve at $(9, 1)$ crosses the curve again. [9 marks]

PERSONAL LEARNING

Things to do:

-
-
-
-
-

Things to avoid

-
-
-
-
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Your ideas:

