YEAR 10 – MATHEMATICS (Week 5)-2021-2022

Subject	Mathematics
Class/ Section	Year 10 – A-F
Week	26th September to 30th September
Work send to students by	Google classroom
Total number of lessons per week	6
Unit/Topic	**Unit 15.3,15.4 Equations and Graphs** **Unit 6.6 Solving quadratic equations graphically after rearranging**
Key Vocabulary	Parabola,Turning point, roots, axis of symmetry, sketching.
Lessons 1-6 –Live Zoom lesson along with face to face instruction for students present on a particular day **Work will be assigned in google classroom which will be matched to the students ability.**	**Specific Learning objectives** . . ● Find approximate solutions to quadratic equations graphically. ● Find the solutions graphically after rearranging ● Sketching quadratic graphs

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Tasks/Activities	<u>**Specific Intended Learning Outcomes**</u> Students will be able to ● Find approximate solutions to quadratic equations graphically. ● Find the solutions graphically after rearranging ● Sketch quadratic graphs . . ● Display **Key point 5** and explain that to find the coordinates of the turning point you must write the function in completed square form, e.g. $y = x^2 + 6x + 8 = (x + 3)^2 - 1$. This gives the turning point at (–3, –1). Show this in algebraic form in **Key point 6**. ● To find the turning point, find the smallest value of y. Establish that this happens when $(x + 3)^2 = 0$ and discuss why. (Answer: The square of any number is positive so the minimum value of y will be when $(x + 3)^2 = 0$.) ● Establish how you know whether this is a maximum or minimum by looking at the coefficient of the x^2 term (answer: if positive, a minimum, if negative a maximum). Remember this using smiley faces: a positive thing makes us smile (= shape of a minimum), a negative thing makes us unhappy (= shape of a maximum). Display **Key point 7** to explain what to include in a sketch. Show students how to find the roots by equating the completed square form to zero and solving: $0 = 2(x + 2)^2 - 14$. This gives $x = 2 \pm \sqrt{7}$. Emphasise that giving the answer in surd form gives an exact solution **Complete the questions assigned from the Text Book – Edexcel GCSE (9- 1)Mathematics Higher Student Book and PPT** Students will be put in break out rooms during Zoom lesson to encourage collaborative learning
Assessment Criteria/ Essential questions	Essential Question that are according to the Pearson edexcel specification

Here is a quadratic graph.
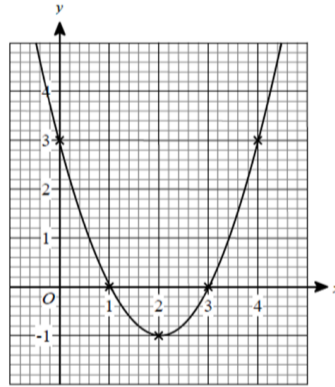
13 (a)   Show that the graph is $y = x^2 - 4x + 3$

(3 *marks*)

13 (b)   By drawing an appropriate line on the grid,
solve the equation $x^2 - 3x + 1 = 0$

(3 *marks*)

Assessment objectives expected by the board with respect to the above question is listed below.

AO1: Use and apply standard techniques
AO2: Reason, Interpret and communicate mathematically
AO3: Solve problems within mathematics and in other contexts.

Resources

1. **Edexcel GCSE (9- 1)Mathematics Higher Student Book**

2. Ppt on the the topic