ST.MARY'S EDENDERRY

DEPARTMENT OF MATHEMATICS
PROBLEM SOLVING CHALLENGE

Q1.

Junior Cycle

In the following two groups of shapes, which does not belong to the group? Explain your answer in each case.

Set **1.**

| A | B | C | D | E |

Set **2.**

Q2.

Senior Cycle

The cost encountered by a firm which makes dresses are of two types:
Fixed costs of €2000.00 per week and production costs of € 20 for each dress made.
Market research indicates that if they price the dresses at €30.00 each they will sell 500 per week and if they set the price at €55.00 they will sell none.
Between these two extreme values, the graph of sales against price is a straight line.
If the company prices the dresses at € x a pair where $30 \leq x \leq 55$, find expressions for

    (a)   The weekly sales
    (b)   The weekly receipts
    (c)   The weekly costs

Hence show that the profit € P is given by $P = -20x^2 + 1500x - 24000$ and find the price at which each dress should be sold to maximise the profit.

Answers on an A4 sheet with your <u>Name</u>, <u>Year</u> and <u>Class</u> should be handed into the office or given to Mr. McEvoy before 4pm on Friday 29th of April

Monthly Prize for both Junior and Senior Cycle.*

<u>Good Luck.</u>

<u>*Junior Cycle students answer question 1 only.*</u>   <u>*Senior Cycle students answer question 2 only*</u>