



DEPARTMENT OF MATHEMATICS

PROBLEM SOLVING CHALLENGE



Q1.

Junior Cycle

The number of apples which fall from an apple tree increases by the same amount each day. On day three 16 apples fall from the apple tree. On day six 25 apples fall from the apple tree. After 20 days how many apples have fallen from the tree in total?



Q2.

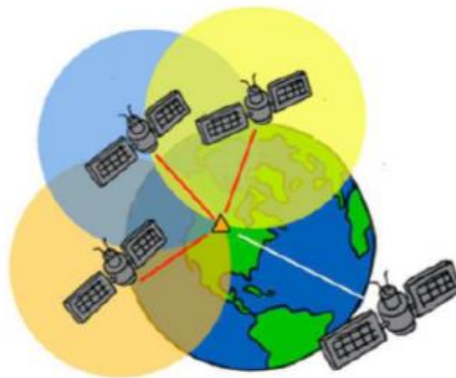
Senior Cycle

GPS technology allows a device on the Earth's surface to determine its position as it relates to the intersection of multiple circles. Think about your location as a point on a coordinate grid and imagine three satellites as other points anywhere else on the grid. Find the point of intersection of the following three circles to find the point they all have in common.

$$C1: (x - 4)^2 + (y - 4) = 13$$

$$C2: (x + 3)^2 + (y - 4)^2 = 34$$

$$C3: (x - 2)^2 + (y + 5)^2 = 36$$



Answers on an A4 sheet with your Name, Year and Class should be given to Mr. McManus or to Mr. McEvoy in room 33 before 4pm on Friday 21st of December.

Monthly Prize for both **Junior** and **Senior** Cycle.*

Good Luck.

Junior Cycle students answer question 1 only.

Senior Cycle students answer question 2 only