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# **Apex Examination Council**

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**END OF TERM TWO, 2025**

**Uganda Advanced certificate of education**

S.5 MATHEMATICS

PAPER 2

2 HOURS

## **INSTRUCTIONS**

-Attempt all items

1. In a school survey, 200 students were asked about their internet usage habits. They were asked to choose from three activities: Social Media (like Facebook and TikTok), Academic Work (such as research and homework), and Playing Games. The results showed that 165 students use the internet for Social Media, 130 use it for Academic Work, and 100 use it for Playing Games. Among them, 70 students use it for both Social Media and Academic Work only, 60 use it for both Social Media and Playing Games, and 50 use it for both Playing Games and Academic Work. Additionally, no students exclusively use the internet for playing games. Now, the school needs to decide whether to set rules if more than 60% of students spend their internet time on Social Media.

Task:

(a) Calculate how many students use the internet for at least one of these activities.

- (b) Determine how many students don't use the internet at all.
- (c) Estimate the percentage of students who use the internet solely for Academic Work.
- (d) Based on the findings, advise the school on whether to implement rules or not.

**2.** A layer chicken farmer decided to weigh a sample of 800 eggs on his farm and classify them according to their mass (m grams) to optimize the packing process. The frequency distribution of the egg masses is as follows:

Mass in grams	Number of eggs
40-44	36
45-49	142
50-54	286
55-59	238
60-64	76
65-69	22

The farmer's plan is to pack eggs in given weights.

**Task:**

- (a) Determine the median mass of an egg from the given frequency distribution to understand the central tendency of the egg weights.
- (b) What would be the percentage of eggs which would be classified as large (over 62 grams)
- (c) The farmer plans to pack eggs that weigh over 62 grams, with each pack containing 12 eggs. If each pack costs UGX 12,000, calculate the total revenue the farmer will earn from selling all the large eggs and compare the revenue earned from selling the same eggs to a middle man who he is buying at UGX 9000. What advice will you offer to the farmer.

**3.** A group of 50 people in a certain company were asked by the manager which of the three newspapers A , B, or C, they read. The results showed that 25 read A, 16 read B and 14 read C, 5 read both A and B, 4 read both B and C, 6 read both C and A and 2 read all the three.

Task

- (a) Represent the above information on a venn diagram
- (b) if a person has been chosen at random from the group, help the manager understand the proportion of people who read;
  - (i) at least one of the newspapers

**END**