

**UACE**  
**P425/1**  
**MATHEMATICS**  
JUL/AUG 2024  
2½ hours

**COMPETENCE BASED ASSESSMENT**  
*Uganda Advanced Certificate of Education*  
**S.5 MATHEMATICS P425/1**

2hours 30 mins

**INSTRUCTIONS**

- This paper has a total of five items divided into two sections
- Section A has one question and it is compulsory
- Section B has four items out of which choose only two
- All questions in section B carry equal marks
- You are expected to obey all examination rules as directed in UNEB.

**SECTION A**

ITEM1. Imagine being a worker in a company determining workers payments by multiplying \$2 on the cube of the total number of hours worked per worker. One day, each of the workers Alex, Beckie and Charles were paid \$32, \$256 and \$108 respectively. The finance manager then called you to simply make him know the exact number of hours corresponding to the total payments which was given to the three workers that day.

Task: With evidence, respond to the general managers questions.

**SECTION B**

ITEM2. A deadly virus attacked a certain country. The initial number of male and female people infected is 14 and 35 respectively. However, this initial number of sick people is thought to be increasing at a rate 30% and 69% per week. As the minister of health was addressing a live presentation on the YouTube social media handle, one individual asked through the comment section "What will be the probability of finding a woman contracted by the virus over thousand patients?"

Task. Kindly response to the question in the comment section.

ITEM3. Mike is a carpenter planning to inscribe an equilateral triangular design into a circular. In this, he wishes to ensure that the diameter of the door is two meters longer than the triangular base. When asked about the exact height of the triangular design, the carpenter said it is impossible to determine the exact simplified value of such triangular designs.

Task. Make a challenge and come up with what looked impossible in the eyes Mike.

ITEM 4. A teacher wants to put a limit on the number of students who can take mathematics as one of their subjects in senior five. This is because the school has limited furniture. She wants to set a pass mark that she thinks the students can obtain as their average mark. The students got the following marks.

|    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|
| 42 | 31 | 28 | 40 | 23 | 37 | 33 | 44 | 25 | 30 |
| 36 | 43 | 32 | 24 | 41 | 34 | 27 | 42 | 48 | 26 |
| 22 | 30 | 41 | 46 | 37 | 29 | 43 | 20 | 32 | 40 |
| 47 | 26 | 38 | 23 | 40 | 33 | 27 | 45 | 24 | 36 |
| 20 | 35 | 27 | 32 | 21 | 42 | 30 | 41 | 28 | 47 |

Tasks.

- Help the teacher come up with the average mark that will be used as the pass mark.
- Display the above information on a suitable statistical graph and use it to estimate the most appearing mark.

ITEM5. Many years ago, Mugaga started his shoe making business with total capital of Ugx.10millions. After some time, he started up Wholesale business with Ugx.20millions. As we talk, the two business are now making 35 years of operation with their initial capital stock increasing at an average rate of 20% per annum, though the total capital stock of the shoe business is currently Ugx.14million higher than that of in the wholesale business. What is not yet clear to the public is the year Mugaga may have started the shoe making business and also the expected total capital stock of the whole sale business as per now.

Task. Give an insight to the public regarding the information which is not yet clear to them.

END

*“Every Battle is won or lost before it is fought”*