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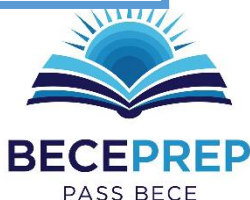
AUGUST, 2025
MATHEMATICS – 2 HRS
0550360658

Name.....

Class



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AUGUST 2025 MATHEMATICS 2 HRS

Do not open this booklet until you are told to do so. While you are waiting, read and observe the following instructions carefully. Write your name and index number in ink in the spaces provided above.

This booklet consists of two papers; I and II. Answer Paper 2 which comes first in your answer booklet and Paper 1 on your Objective Test answer sheet. Paper 2 will last for **1 hour**, after which the answer booklet will be collected. Do not start Paper 1 until you are told to do so. Paper 1 will last **60 minutes**.

VERY IMPORTANT INSTRUCTIONS TO YOU IF YOU WANT TO PASS THIS PAPER

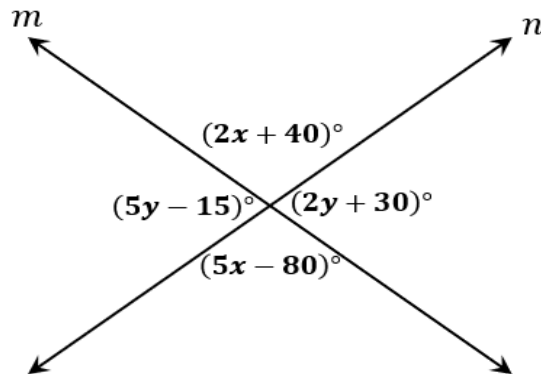
- Read the questions, brainstorm and plan your answers before you finally answer them. This is one of the good ways to manage your time in an exam and to do well.
- Clearly use simple but detailed sentences and provide the best answers possible at all times.
- Write answers that provide additional information. If you just list answers or provide one to three worded answers where explanations are required, you will score very low marks or nothing at all.
- Do well to explain your answers to help earn full marks and give one example if needed. Check your units of measurement, spellings, grammar, update answers and read over your work before submitting your script.
- Write question numbers boldly, start every new major question (answers) on a new page.
- Do not rewrite the full question before answering. Only write the question number that corresponded to the answer.
- Show workings in all instances in section B if the question involves calculations.

PAPER 2 - ESSAY

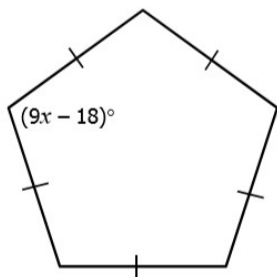
[60 MARKS]

Answer **four** questions **only**

1. a. The annual profit of a business was divided between two partners, A and B in the ratio 3:5. If B received GH¢3000 more than A, what was the total profit?
- b. Given that $x = \begin{pmatrix} 4 \\ 5 \end{pmatrix}$, $y = \begin{pmatrix} 0 \\ -3 \end{pmatrix}$ and $z = \begin{pmatrix} -2 \\ 7 \end{pmatrix}$, find $2(x + 3y + 5z)$
- c. Find $(x^2 + y^2)$ using the diagram below.



2. a. Find the truth set of $\frac{1}{5}(2 - y) + 1 \leq \frac{1}{2}(3y - 4)$ and represent your answer on a number line.
 - a. A cliff is 105m high. From the top of the cliff the angle of depression of a boat is 35° . Find the distance of the boat from the foot of the cliff to the nearest metre. Take $\tan 35^\circ = 0.613$
 - b. Find the value of x in the diagram below.



3. a. Find the equation of a straight line with a slope of $\frac{2}{3}$ and passing through the points $(-4, 5)$
 - b. There are fifty pupils in a class. Out of this, one-tenth speak French only and one-fourth of the remaining speaks English only. Find the number of pupils who speak
 - i. both English and French
 - ii. only English
 - c. Given that $m = 3$ and $n = -2$, simplify and substitute the value to evaluate the expression $\frac{2}{m-3n} - \frac{3}{m+n}$
4. Joe spent $\frac{1}{4}$ of his monthly salary on rent, $\frac{1}{3}$ of the remaining on food and $\frac{1}{8}$ of what still remained on clothes. If he had GH¢200 left, find;
 - i. His total income
 - ii. What he spent on food
 - iii. How much he spent on clothes
 - iv. His salary left as fraction of the his total monthly income

5. The sets $P = \{\text{multiples of } 3\}$, $Q = \{\text{factors of } 72\}$ and $R = \{\text{even numbers}\}$ are subsets of $U = \{18 \leq x \leq 36\}$.
- List the elements of P, Q and R .
 - Find;
 - $P \cap Q$
 - $Q \cap R$
 - $P' \cap R$
 - the relation between $P \cap Q$ and $Q \cap R$
 - The perimeter of a rectangular plot of land whose length is $(2x+5)$ m and width $(x - 10)$ is 80 m. Find the
 - value of x ;
 - area of the plot;

6. a. Copy and complete the table for the relation

x	-3	-2	-1	0	1	2	3	4
y	11			5		1		-3

- Using a scale of 2cm to 1 unit and 2cm to 2 units on the x – axis and y – axis respectively, draw on a graph sheet two perpendicular axis ox and oy .
- Using the table, plot all the points of the relation $y = 5 - 2x$
 - Draw a straight line through all the points.
- Using the graph, find the
 - value of y when $x = 3.6$
 - value of x when $y = -2.6$
 - gradient of the line