UNIVERSITY OF EDUCATION, WINNEBA
INSTITUTE FOR TEACHER EDUCATION AND CONTINUING
PROFESSIONAL DEVELOPMENT (ITECPD)

END OF SECOND SEMESTER EXAMINATIONS, OCTOBER, 2024

LEVEL: 200
COURSE CODE: JBM242
COURSE TITLE: LEARNING, TEACHING AND APPLYING EUCLIDEAN GEOMETRY AND TRIGONOMETRY

TIME ALLOWED: 2 HRS

STUDENT'S INDEX NUMBER:

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GENERAL INSTRUCTIONS:
- This paper is made up of ONE SECTION.
- *The Section is made up of five essay type questions.*
- *Answer any THREE questions in your answer booklet.*
- *Each question carries equal marks. You are expected to start each question on a new page.*
- *You will need manuscript sheets for this paper.*
- *You are expected to hand over your answer booklet to the invigilator before you leave the examination hall.*

Instruction: *Answer any three (3) questions in the answer booklet provided.*

1. Describe an activity you will use to explain to JHS students that, for a right-angled of sides a, b and c, where c is the longest side (the hypotenuse), the Pythagoras' theorem is given by $c^2 = a^2 + b^2$. **(20 Marks)**

2. Describe an activity you will use to explain to JHS students that, the area of a circle is given by $A = \pi r^2$ **(20 Marks)**

3. a. In the diagram below, the lines CE and DF intersect at G. CD and FE are parallel and $|CD| = |FE|$.
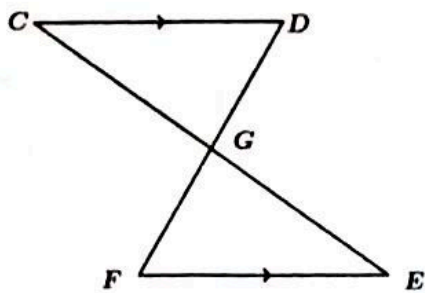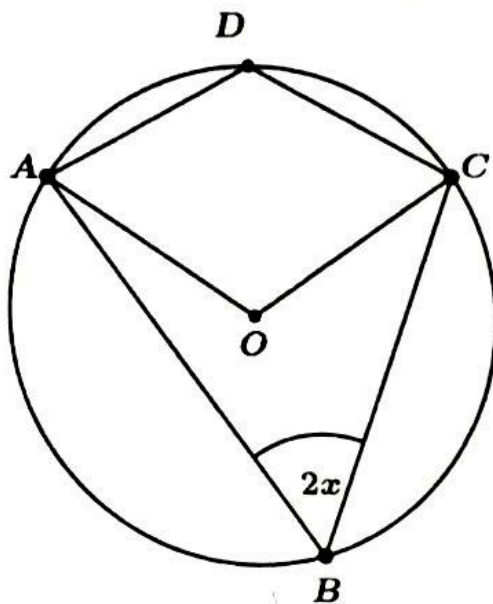
Prove that triangle CDG and EFG are congruent. **(12 Marks)**

b. The exterior angle of a regular polygon is 30°, how many sides have the polygon. **(20 Marks)**

4. a. O is the centre of the circle below.

Angle ABC is $2x$. Find
  i. Reflex angle AOC.
  ii. Obtuse angle ADC. **(12 Marks)**

b. From a point 200m from the foot of a cliff, the angle of elevation of the top of the cliff is 60°, find the height of the cliff. **(8 Marks)**

5. Describe an activity you will use to help JHS students to understand that, the sum of interior angles of a polygon with n sides is given by $(n - 2) \times 180°$. **(20 Marks)**