

DEPARTMENT OF MATHEMATICS

END OF TERM I EXAMINATIONS

MATHEMATICS

DURATION: 2 ½ HOURS

INSTRUCTIONS

- Attempt all question in section A and only three from section B
- Cross out any work that you don't want to be marked
- Attempting more than instructed is highly précised

SECTION A

1. Find the LCM and HCF of 48, 36 and 45
2. In a class of 29 students, 15 like English, 13 like mathematics and 9 do not like any of the subjects. Determine the number of those who like both subjects.

3. Simplify $\frac{1\frac{1}{2}(3\frac{1}{3} + 3\frac{2}{5})}{4\frac{1}{3} - 2\frac{1}{2}}$

4. Solve the equation $\frac{2n-5}{6} - \frac{n-2}{4} = \frac{1}{3}$

5. After selling an article at Sh. 68000/= . A trader made 35% profit. Determine how much profit was made

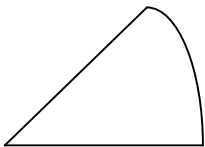
6. Given that $n * t = 3n - t$, evaluate $2 * 3$

7. If a line though (3, 0) and (7, 6) has a gradient of 2, what is the value of a

8. Simplify $2(x-4y) - 12(y -4x)$

9. Find the mid-point of a line segment joining points A (3, -4) and B (-5, 2)

10. The figure represents a section of a circle of radius 7cm



Determine its area

SECTION B

11. The distance from Gulu for Kampala is 380km. link bus leaves Gulu at 7:30am and travels non- stop at a speed of 60kmhr^{-1} . At 8:50am. Baby coach leaves Gulu moving at speed of 160kmhr^{-1} for three hours it stopped for I hour for service. The baby coach resumes the journey moving at a speed of 120km/hr until it reaches kampalala.

- (a) Represent the journeys of the two buses on a graph. (7mks)
- (b) State the times when the two vehicles;
 - (i) Reached kampala (2mks)
 - (ii) Had covered the same distance from Gulu. (2mks)
- (c) Determine the difference in the times of arrival. (1mk)

12. (a) Given $a * b = \frac{a^2 + b^2 - 2ab}{a - b}$ find the value of ;

- (i) $4 * 3$ (ii) $8 * (4 * 2)$

(b) Given that $a * b = a^3 - \frac{a}{2}$, find the value of k if $3 * k = 25$

13. Given the inequalities, $y \leq x$, $x < 4$ and $y + 2x \geq 6$.

Represent the inequalities on a graph on same axes using a scale of 2cm to represent 1 unit by shading the unwanted regions

- (a) Name the figure forms by the wanted regions. (1mk)
- (b) Calculate the area of the figure. (3mks)

14. (a) Determine the equation of the line that passes through (9, 2) and is parallel to $7y - 3x = 2$. (14mks)

(b) Determine the equation of the line through (3, 3) and 2, 1). (4mks)

(c) Calculate the length of the line segment joining points A (3, 5) and B (-3, -3). (4mks)

15. Using a ruler, a pencil and a pair of compasses only construct a triangle ABC such that angle CAB = 30° , AB = 5cm and angle ABC = 120° . (5mks)

(a) Measure length AC (1mk)

(b) Circumscribe the triangle ABC and measure the radius of the circle. (2mks)

(c) Drop a perpendicular from C to D a point on the line AB produced from and measure length CD. Calculate the area of ABC. (4mks)

END