Name …… Class……..
Adm no ……..

FORM 1
END-YEAR EXAMINATION 2017
2 hours

Instructions to candidates

- *Write your name and class in the spaces provided above.*
- *The paper contains two sections, section A and B.*
- *Answer **ALL** the questions in **Section A** and any **four** questions from **Section B***
- *All answers and working must be written on the question paper in the spaces provided below each question.*
- ***Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.***
- *Marks may be given for correct working even if the answer is wrong.*
- *Mathematical tables may be used.*
- *Electronic calculators MUST NOT be used.*

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Section A

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total

Section B

17	18	19	20	21	22	Total

Grand Total

This paper consists of 14 printed pages
Candidates should check the question paper to ascertain
that all the pages are printed as indicated and no questions are missing.

SECTION A: (50 MARKS)
Answer ALL questions in this section

1. Express the number 8281 and 455 as a product of its prime factors hence evaluate $\sqrt{\frac{8281}{455}}$

{3 marks}

2. Work out $\frac{\left(2-1\frac{3}{4}\right)\div\frac{3}{5}\ of\ 2\frac{1}{3}}{\frac{1}{4}+\frac{1}{2}\left(\frac{3}{2}-\frac{1}{3}\right)}$ {3 marks}

3. Find the difference between the product of -50 and -10 and the sum of -50 and -10. {3 marks}

4. The marked price of an article in a shop was sh. 1230. After a discount a man bought it for sh. 1180.80. What was the percentage discount? {3 marks}

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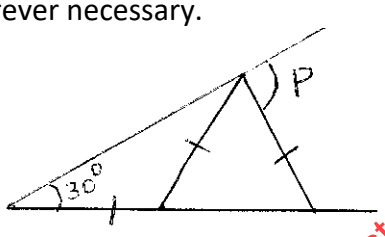
5. Find angle P. Give reasons wherever necessary. {3 marks}



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6. The area of a rhombus is 60 cm^2. Given that one of its diagonals is 15 cm long, calculate the perimeter of the rhombus. {3 marks}

7. Two angles of a pentagon are 57° and 84°. The other three angles are in the ratio 5:6:8. Find these angles. {3 marks}

8. Write as a single fraction

a) $\frac{1}{a-1}-\frac{1}{a}$ {3 marks}

b) $\frac{3}{x^2y}-\frac{2}{xy^2}+\frac{1}{x^2}$ {3 marks}

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9. Express $2.\dot{7}\dot{3}$ as a fraction. {3 marks}

10. Use tables to find the square root of 0.8236. {3 marks}

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11. Solve the equation $\frac{x-2}{3}-\frac{1}{4}+1=\frac{x+1}{5}$ {3 marks}

12. If 20 women can made 30 rugs in 40 days. How many rugs can 40 women make in 60 days working at the same rate. {4 marks}

13. Solve by substitution method. {4 marks}
$3x + 2y = 1$
$3y - 4x = 10$

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14. A roll of copper wire is made of wire 200 m long with a circular cross-section of diameter 1.2 mm.
a) Calculate the volume of the coil. {2 marks}

b) If the density of the copper is 8.8 g/cm^3, calculate the weight of the copper wire in kilograms. {2 marks}

15. A car manufacturing firm exports 60% of its cars. One third of the remainder are sold in the home market, and 50% of the rest are sold at reduced prices. What percentage of the production is sold in reduced prices? {4 marks}

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16. Goreti used Ksh. 380 to boy 10 books and 3 pencils. Her sister Margie used Ksh. 195 to buy 5 books and 2 pencils.

a) What is the cost of {3 marks}

i) one book

ii) one pencil

b) If their brother George needs to buy four books and two pencils, how much money does he need? {1 mark}

17. Peter walks directly from a point A towards the foot of a flag post 240 m away. After covering 140 m, he observes that the angle of elevation of the post is 45°.

a) Determine the angle of elevation of the top of the flag post from A, by scale drawing. {3 marks}

b) Find the height of the flag post. {1 mark}

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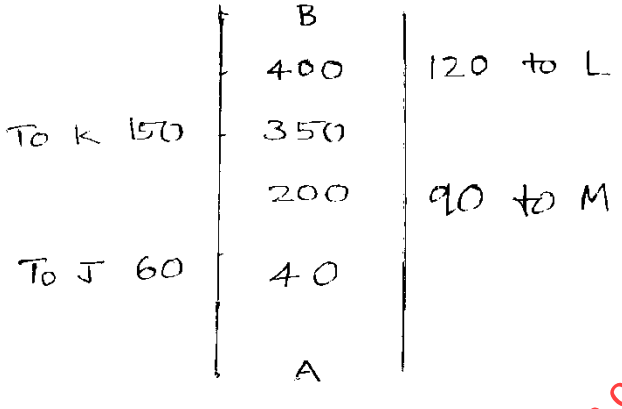
SECTION B
(Attempt any 4 questions in this section)

18. A maize field measurement are recorded as follows:



a) Taking AB = 500 as the base line use a scale 1 cm represent 50 m to draw the map of the maize field. {3 marks}

b) Calculate the area of the maize field. {5 marks}

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c) Calculate the area in hectares. {2 marks}

19. A cylindrical tank of diameter 1 m, height 99.5 cm and thickness 1.5 cm is three-quarter full of milk.

a) Calculate the volume of milk in cubic centimeters. {3 marks}

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b) The milk is to be packed in small rectangular packets whose dimensions are 5 cm by 4 cm by 12.5 cm. Full packets are sold at Ksh. 20 per packet.

i) Find the volume of milk contained in one packet. {3 marks}

ii) Find the number of packets need to be fill milk. {2 marks}

c) The exact amount that will be realized from the sale of all the packets of milk. {2 marks}

20. Using ruler and compasses only, construct a trapezium ABCD in which AB is parallel to CD.
AB = 9 cm, AD = 5 cm, angle DAB = 75^{o} and angle ABC = 60^{o}. {4 marks}

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i) Measure CD {1 mark}

ii) At B construct a line perpendicular to AB and let it meet DC produced at F and hence measure BF. {3 marks}

iii) Calculate the area of the trapezium. {2 marks}

21. The travel table for two ordinary services and express bus services from town A to town D are given below. The number after each stop gives the difference in kilometers to the next stop.

Bus service	Town A (100 km)	Town B (200 km)	Town C (200 km)	Town D
1	0630	0830	1100	1330
2	0715			1115
3	0900	1100	1330	1600
4	1030			1530

a) A family intends to arrive at town D before 3.00 p.m. Which bus services should they take from town A and how long will the journey take? {2 marks}

b) The standard fare is sh. 1.50 per kilometer. Children under 5 years go for free, children aged 5 years and 15 years go under half the price and there is a supplement of 50% for express services. How much will it cost the family to travel from town A to D, if there were 3 adults and two children aged 10 years and 2 years respectively:

i) by ordinary bus service? {4 marks}

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ii) by express bus service? {4 marks}

22. A machinist in a clothing factory is paid for making skirts at the following rate.

No. of skirts (n)	10	20	30	40	50
Wages (w) Kshs.	400	550	700	850	1000

a) Draw a graph with n along x-axis and w up the y-axis. {5 marks}

b) Find the amount earned for making 24 skirts. {2 marks}

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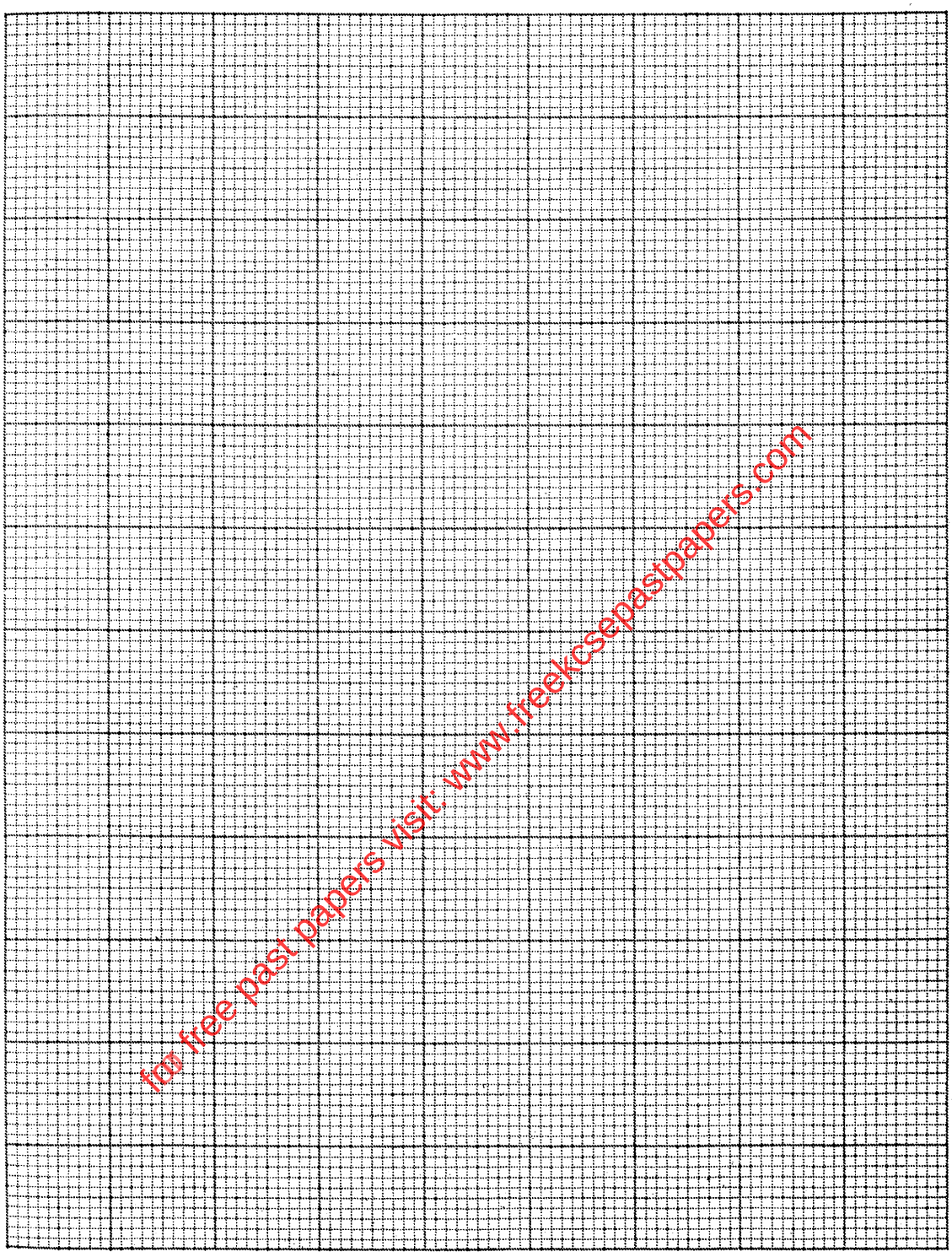
c) Find the no. of skirts to make to earn sh. 900. {2 marks}

d) Find a formula giving w in terms of n. {1 mark}



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