

SOARING HIGH IN KCPE EXAM

SECOND PREDICTION 2021



MATHEMATICS

Time: 2 hours

READ THESE INSTRUCTIONS CAREFULLY

1. You have been given this question booklet and a separate answer sheet. The question booklet contains 50 questions.
2. Do any necessary rough work in this booklet.
3. When you have chosen your answer, mark it on the **ANSWER SHEET**, not in this question booklet.

HOW TO USE THE ANSWER SHEET

4. Use only an ordinary pencil.
5. Make sure that you have written on the answer sheet:

YOUR INDEX NUMBER
YOUR NAME
NAME OF YOUR SCHOOL

6. By drawing a **dark line** inside the correct numbered boxes mark your full index number (i.e School Code Number and the three- figure Candidate's number) in the grid near the top of the answer sheet.
7. Do not make any mark outside the boxes.
8. Keep the answer sheet as clean as possible and **DO NOT FOLD IT**.
9. For each of the questions 1-50, answers are given. The answers are lettered A, B, C and D. In each case only **ONE** of the four answers is correct. Choose the correct answer.
10. On the answer sheet the correct answer is to be shown by drawing a **dark line** inside the box in which the letter you have chosen is written.

Example:

In the question booklet:

8. A plane was flying at a speed of 288km/hr. Calculate the average speed in m/s.
A. 120 m/s
B. 80m/s
C. 144m/s
D. 48m/s

The correct answer is **B** on the answer sheet:

7 [A] [B] [C] [D] 8 [A] [B] [C] [D] 9 [A] [B] [C] [D] 10 [A] [B] [C] [D] 11 [A] [B] [C] [D]

11. Your **dark line** **MUST** be written in the box
12. For each question **ONLY ONE** box is to be marked in each set of four boxes.

This questions papers consist of 8 printed pages **TURN OVER**

1. Which of the following numbers is seven million nine hundred and ninety seven thousand and seven in symbols?
 A. 7997070
 B. 7977600
 C. 7997007
 D. 79097007
2. What is the place value of digit 4 obtained after working out $0.4896 \div 12$?
 A. Tenths
 B. hundredths
 C. thousandths
 D. 0.0408
3. What is the difference between the LCM and the GCD of 12,18 and 36?
 A. 36
 B. 30
 C. 42
 D. 6
4. What is 798.895 rounded off to the nearest hundredths?
 A. 798.89
 B. 798.9
 C. 798.90
 D. 798.900
5. What is the value of:
 $48 \div 6 + 4 \times 3 - 32 \div 8 \times 2 + 7$
 A. 19
 B. 5
 C. 15
 D. 27
6. What is the next number in the pattern:
 1,2,5,10,17,26, ____
 A. 37
 B. 36
 C. 39
 D. 40
7. The decimals 0.18312, 0.18132, 0.18123, 0.18213 are to be written from the largest to the smallest. Which of the following is the correct order?
 A. 0.18312, 0.18213, 0.18132, 0.18123
 B. 0.18123, 0.18132, 0.18213, 0.18312
 C. 0.18132, 0.18312, 0.18123, 0.18213
 D. 0.18132, 0.18213, 0.18312, 0.18123
8. A square garden has an area of 7225m^2 . What will be the length of wire required to fence four strands of wire round the garden?
 A. 85
 B. 340
 C. 1360m
 D. 115600m
9. Which of the following sets of measurements will form a right angled triangle when constructed?
 A. 6cm, 8cm, 12cm
 B. 9cm, 16cm, 25cm
 C. 8cm, 12cm, 13cm
 D. 7cm, 24cm, 25cm
10. In the year 2018, the number of animals in a farm was 3200. In the year 2020, the number of animals increased by 40%. How many animals are there in 2020?
 A. 1280
 B. 1920
 C. 4480
 D. 3280

11. What is the value

$$\frac{0.25 \times 3.6}{0.45}$$

- A. 2
- B. 0.02
- C. 0.2
- D. 20

12. The fractions $\frac{2}{3}, \frac{2}{5}, \frac{1}{2}, \frac{3}{7}$ and $\frac{4}{9}$ are to be arranged in order from the smallest to the largest. Which one of the following is the correct order?

- A. $\frac{2}{5}, \frac{3}{7}, \frac{4}{9}, \frac{1}{2}, \frac{2}{3}$
- B. $\frac{2}{3}, \frac{1}{2}, \frac{4}{3}, \frac{3}{7}, \frac{2}{5}$
- C. $\frac{2}{5}, \frac{3}{7}, \frac{4}{9}, \frac{2}{2}, \frac{2}{5}$
- D. $\frac{2}{3}, \frac{1}{2}, \frac{3}{7}, \frac{4}{9}, \frac{2}{5}$

13. A distance of 10 kilometers is represented on a map by a length of 5 cm. What is the scale used?

- A. 1:20000
- B. 1: 200000
- C. 1:2000
- D. 1: 200

14. In a farm, there are pigs, rabbits and birds. The number of pigs is 15 more than that of rabbits. The number of birds is three times that of rabbits. If the number of pigs is p, which one of the expressions below represents the number of the animals in the farm?

- A. $3p - 60$
- B. $5p + 30$
- C. $5p - 60$
- D. $5p + 60$

15. What is the value of $\frac{3}{5} + \frac{1}{3} \div \frac{2}{3}$

- A. $1\frac{1}{10}$
- B. $1\frac{1}{8}$
- C. $\frac{10}{11}$
- D. $1\frac{2}{5}$

16. Thirty litres of milk was given to a class of 60 pupils to share equally. How many deciliters of milk did each pupil get?

- A. 5
- B. 50
- C. 500
- D. 0.5

17. An aeroplane left London at 2155 h on Tuesday. It took 7 hours 45 minutes, to reach Nairobi. When did it reach Nairobi?

- A. Tuesday 5:40 a.m.
- B. Tuesday 5:40 p.m.
- C. Wednesday 5:40 p.m.
- D. Wednesday 5:40 a.m.

18. Which one of the following quadrilaterals has only one pair of parallel lines?

- A. Trapezium
- B. Rectangle
- C. Rhombus
- D. Parallelogram

19. Mutua sold an item for Sh. 19800 and made a loss of 10%. What was the cost of the item?

- A. Sh. 17820
- B. Sh. 18000
- C. Sh. 2200
- D. Sh. 22000

20. What is the place value of digit 6 in the number 70608290?

- A. Hundred thousands
- B. Millions
- C. Tens of thousands
- D. Six hundred thousands

21. What is the value of y in the equation

$$\frac{2y-3}{3} - 3 = \frac{2y}{5}$$

A. 15

B. $3\frac{3}{4}$

C. $4\frac{1}{2}$

D. $7\frac{1}{2}$

22. What is 4 : 5 as a percentage?

A. 125%

B. 80%

C. 40%

D. 50%

23. What is the volume, in cubic centimeters, of a cylinder whose diameter is 28 cm and a height of 20 cm? (Take $\pi = \frac{22}{7}$)

A. 49280

B. 12320

C. 2112

D. 880

24. The ratio of cows to goats in a farm is 3:2.

If there are 210 more cows than goats, how many animals are there in the farm?

A. 1050

B. 420

C. 140

D. 360

25. What is the total value of digit 8 in the number 90805467?

A. 8,000,000

B. Hundreds of thousands

C. 80,000

D. Eight hundred thousand

26. What is 60995 rounded off to the nearest 1000?

A. 60000

B. 60900

C. 60990

D. 61000

27. What is the value of

$$\frac{3ab^2}{yx} + \frac{5xb^2}{ax^2} \quad \text{if } a=5,$$

$$y=3, x=4 \text{ and } b=2$$

A. 76

B. 6

C. 5

D. 1

28. The marked price of a radio was sh. 15000.

Aura paid Sh. 12000 after getting a discount. What was the percentage discount offered?

A. 20%

B. 25%

C. 80%

D. 125%

29. Ochieng deposited sh. 60000 in a bank that paid compound interest at the rate of 10% per annum. After 2 years he withdrew all his money. How much did he withdraw?

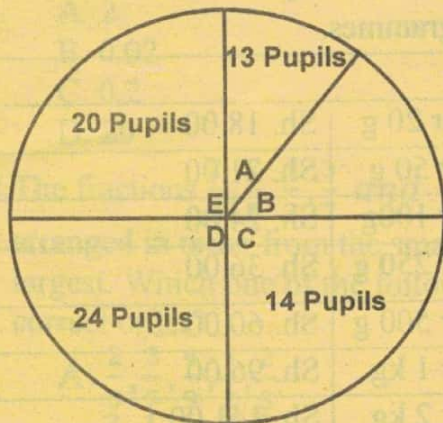
A. Sh. 66000

B. Sh. 72600

C. Sh. 72000

D. Sh. 12600

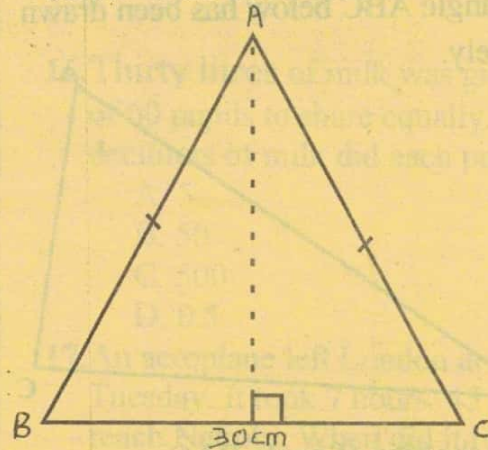
30. The pie graph below shows how a class of 90 pupils chose their favorite sports A, B, C, D and E.



In a pie chart, how many degrees would represent the pupils who chose sport B?

- A. 5°
 B. 20°
 C. 76°
 D. 96°
31. A rectangular tank whose base measures 8m by 5m contains water to a height of 4m. How much water in litres is in the tank?
- A. 160L
 B. 160000L
 C. 1600000L
 D. 0.160L
32. Ndunge borrowed sh. 10000 at a simple interest rate of 15% per annum. How much money altogether did she pay back at the end of 2 years?
- A. Shs. 3000
 B. Shs. 13000
 C. Shs. 3225
 D. Shs. 13225

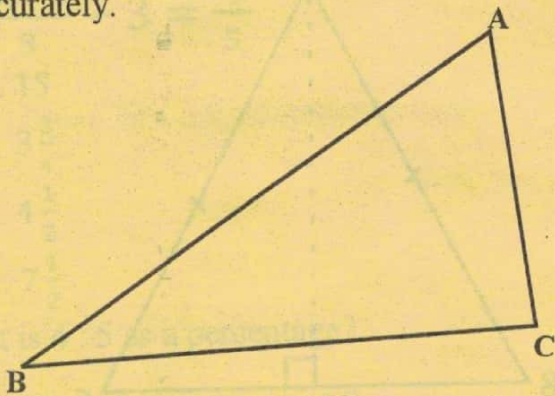
33. The perimeter of the isosceles triangle below is 80 cm. Line BC = 30 cm.



What is the area of the triangle in cm^2 ?

- A. 450
 B. 375
 C. 300
 D. 150
34. An open cylindrical tin of diameter 28 cm and height 21 cm was painted on the outside. What was the area painted? (Take $\pi = \frac{22}{7}$)
- A. 12936 cm^2
 B. 3080 cm^2
 C. 1848 cm^2
 D. 2464 cm^2
35. A pickup whose mass is 1.5 tonnes when empty was loaded with 20 bags of sugar each of mass 100 kg and six bags of beans each of mass 65 kg. What was the total mass, in tonnes, of the loaded pick up?
- A. 2.390
 B. 2390
 C. 3890
 D. 3.890

36. The triangle ABC below has been drawn accurately.



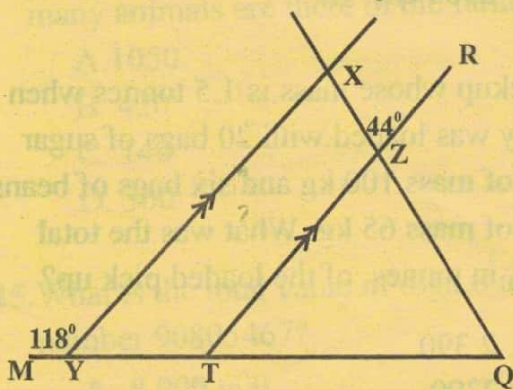
What is the size of angle BAC.

- A. 30°
- B. 90°
- C. 60°
- D. 150°

37. What is the value of $\frac{12^2 - 12}{12} + 8$

- A. $11 \frac{2}{3}$
- B. 19
- C. 132
- D. 11

38. In the figure drawn below, line MYTQ, XZQ and TZR are straight lines. Line YX is parallel to TR. Angle MYX = 118° and angle XZR = 44° .



What is the value of angle TQZ?

- A. 118°
- B. 74°
- C. 62°
- D. 44°

39. The table below shows post office rates for sending letters, postcards and aerogrammes.

Inland			
Not Over 20 g	Sh. 18.00		
Not over 50 g	Sh. 21.00		
Not over 100g	Sh. 24.00		
Not over 250 g	Sh. 36.00		
Not over 500 g	Sh. 60.00		
Not over 1 kg	Sh. 96.00		
Not over 2 kg	Sh. 141.00		
International Air Mail			
	Europe	America	Far East
Aerogramme	Sh. 27	Sh. 35	Sh. 42
Post cards	Sh. 25.50	Sh. 18	Sh. 33

Kaparo sent the following mail:

- 1 letter of mass 14 g
- 1 letter of mass 780 g
- 1 letter of mass 1.6 kg
- Two postcards to Britain (Europe)
- 1 postcard to America
- 1 aerogramme to Far East

How much money did she pay for the mail?

- A. Sh. 366.00
- B. Sh. 354.00
- C. Sh. 330.00
- D. Sh. 399.00

40. Mr. Waweru bought the following items from a supermarket

- 3kg rice @ sh 120
- 2 bars of soap @ sh 140
- 2kg packet of sugar for sh 150
- 3 litres of milk @ sh 50
- 2 $\frac{3}{4}$ litres of kerosene @ sh 60

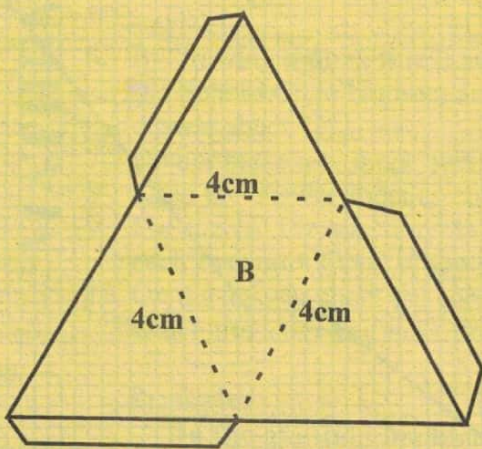
If he gave the shopkeeper two-shilling 1000 notes how much balance did he receive?

- A. Shs 1105
- B. Shs 895
- C. Shs 444
- D. Shs 280

41. Forty two taps can fill a water tank in 14 minutes. How many taps are needed if the tank is to be filled in 12 minutes?

- A. 91
- B. 49
- C. 7
- D. 6

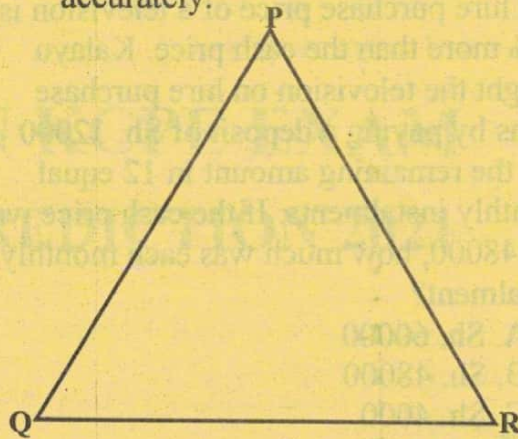
42. Below is a net of a solid.



When the net is folded, which of the solids below will it form ?

- A. Triangular based pyramid
- B. Rectangular prism
- C. Triangular prism
- D. Rectangular based pyramid

43. The triangle PQR below has been drawn accurately.

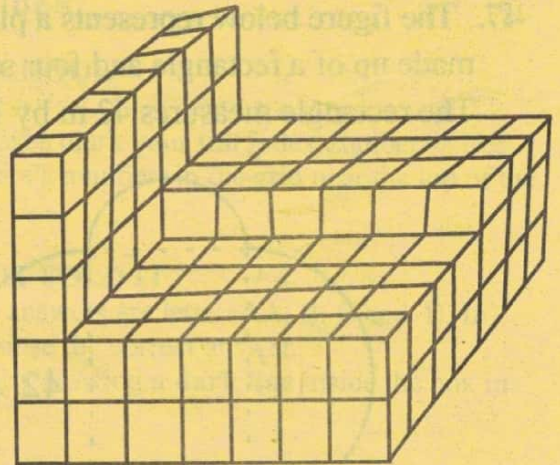


Draw a circle touching the points P, Q, and R.

Measure the radius

- A. 1.9 cm
- B. 3.8cm
- C. 4.3 cm
- D. 8.6 cm

44. How many more cubes are needed to complete the stack below?



- A. 94
- B. 137
- C. 245
- D. 108

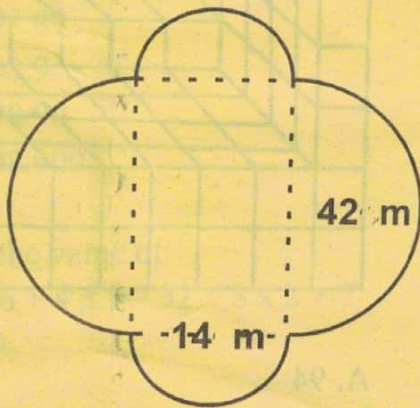
45. The hire purchase price of a television is 25% more than the cash price. Kalayu bought the television on hire purchase terms by paying a deposit of Sh. 12000 and the remaining amount in 12 equal monthly instalments. If the cash price was Sh. 48000, how much was each monthly instalment?

- A. Sh. 60000
- B. Sh. 48000
- C. Sh. 4000
- D. Sh. 5000

46. A saleslady gets a basic salary of Sh. 9000 and a 6% commission of sales above Shs. 80000. In one month she sold goods worth Shs. 380000. What was her total earning that month?

- A. Sh. 18000
- B. Sh. 27000
- C. Sh. 22800
- D. Sh. 31800

47. The figure below represents a plot of land made up of a rectangle and four semi-circles. The rectangle measures 42 m by 14 m.



What is the distance all round the plot of land in metres? (Take $\pi = \frac{22}{7}$)

- A. 176
- B. 1540
- C. 2128
- D. 3080

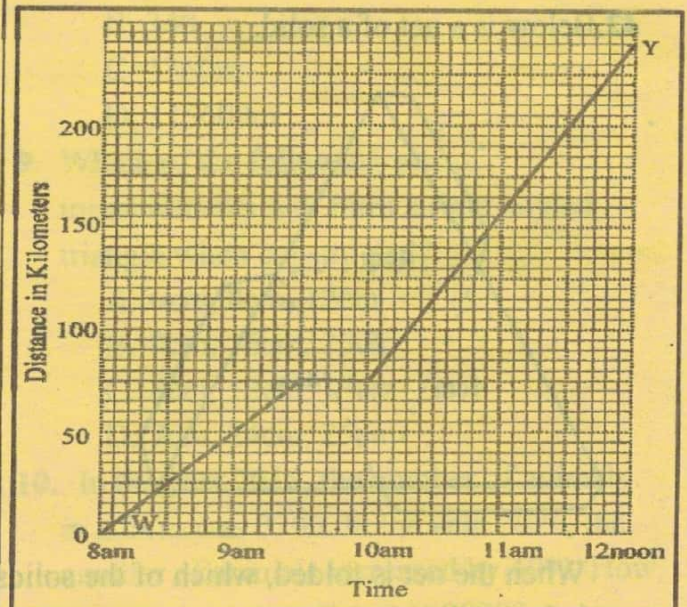
48. The bus fare from town T to town X was decreased by 20% and later increased by 20%. If the original fare was Sh. 250, what is the new fare?

- A. Sh. 250
- B. Sh. 240
- C. Sh. 200
- D. Sh. 160

49. Maradona was admitted in hospital on the morning of 26th September 2020, which was on Tuesday. He was discharged on the morning of November 4th the same year. On which day was he discharged?

- A. Thursday
- B. Friday
- C. Wednesday
- D. Saturday

50. The graph below represents the journey of a bus travelling from town W to Y.



What was the average speed for the whole journey?

- A. 80 km/h
- B. 70 km/h
- C. 68 km/h
- D. 60 km/h