MATHEMATICS

INSTRUCTIONS TO CANDIDATES (Read these instructions carefully)

1. You have been given this question booklet and a separate answer sheet. The question booklet contains **50** questions.

2. When you have chosen your answer mark it on the **ANSWER SHEET,** not in the question paper.
   HOW TO USE THE ANSWER SHEET.

3. Use an ordinary pencil only.

4. Make sure that you have written on the answer sheet:-
   YOUR INDEX NUMBER
   YOUR NAME
   NAME OF YOUR SCHOOL

5. 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.

6. Do not make any marks outside the boxes.

7. Keep your answer sheet as clean as possible and **DO NOT FOLD IT.**

8. For each of the questions 1-50 four answers are given. The answers are lettered A, B, C, D. In each case only **ONE** of the four answers is correct. Choose the correct answer.

9. On the answer sheet show the correct answer by drawing a **dark line** inside the box in which the letter you have chosen is written.

Example

6. Find the value of
   $8^1/_3 - 5^7/_8 + 2^1/_4$
   A. $4^{17}/_{24}$
   B. $5^7/_{12}$
   C. $5^5/_{24}$
   D. $4^5/_{24}$
   The correct answer is A
   On the answer sheet:

6. [A] [B] [C] [D]   7.   [A] [B] [C] [D   8. [A] [B] [C] [D]   9.   [A] [B] [C] [D]

In the set of boxes number **6**, the box with letter **A** printed in it is marked.

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

5032002

1. What is 7090315 written in words?
   A. Seventy million ninety thousand three hundred and fifteen
   B. Seven million ninety thousand three hundred and fifteen
   C. Seventy million nine thousand three hundred and fifteen
   D. Seven million nine thousand three hundred and fifteen

2. What is the value of $\dfrac{300 - 75 \div 15}{5}$?
   A. 3
   B. 15
   C. 59
   D. 295

3. What is the value of: $\dfrac{4}{5} - \dfrac{1}{3}$ of $\dfrac{3}{4} + \dfrac{5}{6}$?
   A. $\dfrac{21}{50}$
   B. $\dfrac{3}{8}$
   C. $\dfrac{7}{54}$
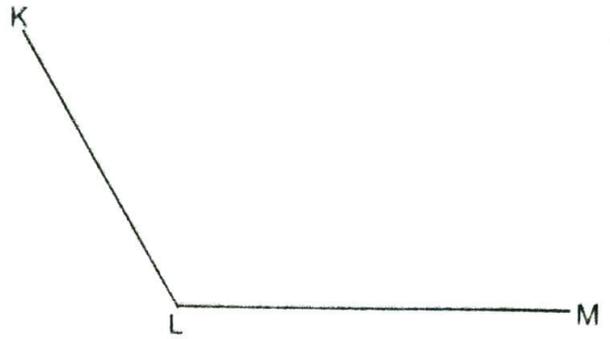   D. $\dfrac{1}{2}$

4. What is the value of $0.324 \div (0.03 \times 0.6)$?
   A. 0.18
   B. 1.8
   C. 18
   D. 180

5. What is 570.9685 correct to the nearest tenth?
   A. 570.0
   B. 570.9
   C. 570.96
   D. 571.0

6. What is the measure of the obtuse angle KLM drawn below?

   A. 117°
   B. 123°
   C. 77°
   D. 63°

7. What is the square of $2\dfrac{1}{4}$?
   A. $1\dfrac{1}{2}$
   B. $4\dfrac{1}{16}$
   C. $5\dfrac{1}{4}$
   D. $5\dfrac{1}{16}$

8. Mavia bought the following items from the shop.
   4 packets of sugar @ sh 107
   2kg tomatoes @ sh 88
   $\dfrac{1}{2}$ kg of meat @ sh 400
   3 bottles of soda @ sh 35
   How much balance did she get from sh 1000?
   A. Sh 91
   B. Sh 370
   C. Sh 630
   D. Sh 909

9. What is $\dfrac{3}{8}(24x - 16y) + 4y$ in the simplest form?
   A. 9x - 10y
   B. 9x + 2y
   C. 9x - 20y
   D. 9x - 2y

10. What is $\frac{3}{8}, \frac{4}{5}, \frac{7}{20}, \frac{3}{10}$ arranged in ascending order?
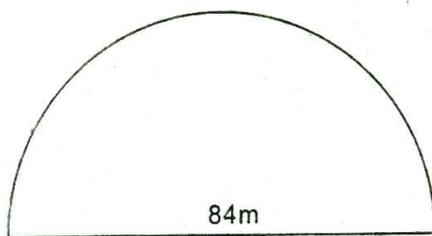
   A. $\frac{4}{5}, \frac{3}{8}, \frac{7}{20}, \frac{3}{10}$

   B. $\frac{3}{10}, \frac{7}{20}, \frac{4}{5}, \frac{3}{8}$

   C. $\frac{3}{10}, \frac{7}{20}, \frac{3}{8}, \frac{4}{5}$

   D. $\frac{3}{8}, \frac{3}{10}, \frac{4}{5}, \frac{7}{20}$

11. The semi circle below represents a vegetable garden. It was fenced with five strands of wire.

84m

   What length of wire was used? (Take $\pi=\frac{22}{7}$)
   A. 132m
   B. 216m
   C. 660m
   D. 1080m

12. Mwakio bought an item after being offered a discount of 30%. If this discount represented a reduction of sh 210, what was the price of the item before the discount?
   A. Sh 700
   B. Sh 490
   C. Sh 143
   D. Sh 63

13. What is the next number in the pattern
   5, 12, 19, 26, _____?
   A. 33
   B. 35
   C. 37
   D. 40

14. What is the value of $\frac{6c-(b-a)}{b+c}$ when a = 4, b=a+2 and c=$\frac{1}{2}$a+3?
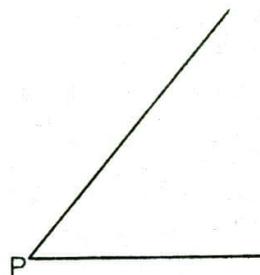
   A. $2\frac{6}{11}$

   B. $2\frac{10}{11}$

   C. $1\frac{9}{11}$

   D. $\frac{10}{11}$

15. The figure below is an incomplete triangle PQR. Complete the triangle such that line PQ=6cm and PR=7cm. Draw a circle whose circumference touches the points P, Q and R.

   What is the radius of the circle?
   A. 1.8cm
   B. 2.5cm
   C. 3.5cm
   D. 7.0cm

16. The marked price of a table is sh 20000. The hire purchase price is 40% more than the marked price. Wasike bought the table on hire purchase terms by paying a deposit of sh 15000 and the balance in 5 equal monthly installments. How much was each monthly instalment?
   A. Sh 7000
   B. Sh 5600
   C. Sh 4000
   D. Sh 2600

17. What is the Least Common Multiple of 24, 30 and 60?

   A. 6

   B. 120

   C. 180

   D. 540

18. A trader had a tonne of salt. He repacked the salt into equal number of 200g and 300g packets. How many packets did he get altogether?

   A. 40000

   B. 20000

   C. 4000

   D. 2000

19. Onyango earns a basic salary of sh 40000 per month plus a commission of 6% on the sale of goods above sh 50000. In one month he sold goods worth sh 300000. How much altogether did he earn that month?

   A. Sh 18000

   B. Sh 55000

   C. 58000

   D. Sh 61000

20. A bus left town Q for town R a distance of 240km. It was driven at a speed of 80km/h. If it arrived at 2:40am, at what time did it depart from town Q?

   A. 11:40pm

   B. 5:40am

   C. 2:43am

   D. 2:37am

21. A rectangular tank measures 3m long, 2.8m wide and 2.5m high. What is the capacity of the tank in litres?

   A. 21

   B. 2100

   C. 21000

   D. 210000

22. In the triangle EFG below, bisect angle EGF to meet line EF at P.
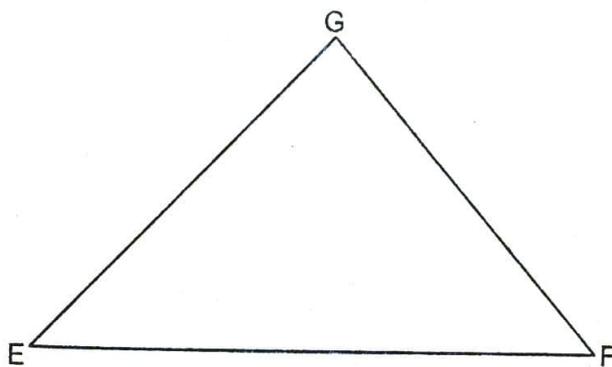
   What is the length of line GP?

   A. 1.8cm

   B. 2.8cm

   C. 3.4cm

   D. 3.9cm

23. The median of eight numbers is 7. Seven of the numbers are 11, 4, 9, 4, 5, 8 and 10. What is the eighth number?

   A. 6

   B. 8

   C. 10

   D. 14

24. The price of a laptop decreased by sh 15000 to 25000. What was the percentage decrease?

   A. $66\frac{2}{3}\%$

   B. 60%

   C. 40%

   D. $37\frac{1}{2}\%$

25. Wahondo performed as follows in a test; Maths 80%, English 75%, Kiswahili 85%, Science 70%, SSTRE 90%. If he represented his scores in a pie chart. How many more degrees would represent SSTRE than Maths?

A. 9°

B. 36°

C. 72°

D. 81°

26. The volume of a cylindrical tin is 2816cm³ and the height is 14cm. What is its diameter? (Take $\pi = \frac{22}{7}$)

A. 8cm

B. 16cm

C. 32cm

D. 64cm

27. What is the value of x in the inequality $5x - 20 > 3x + 8$?

A. $x > 14$

B. $x < 14$

C. $x > 1\frac{1}{2}$

D. $x < 3\frac{1}{2}$

28. The table below shows how three teams performed in sports competition. The number of times each team was placed in either 1st, 2nd or 3rd position is as shown.

	1st	2nd	3rd
Star	3	2	1
Elite	3	3	5
Shine	2	4	2

If 6 points were awarded for the first position, four points for the second position and 2 points for the third position. What was the total points scored by the three teams?

A. 26

B. 92

C. 96

D. 100

29. How many groups of a hundred are there in the total value of the digit in the thousands position in the smallest six-digit number formed using the digits 4, 3, 0, 5, 7, 1?

A. 30

B. 40

C. 3000

D. 4000

30. Magelo and Olwande shared some fruits in the ratio 5:3 Magelo received 30 more fruits than Olwande. How many fruits did Magelo get?

A. 18

B. 45

C. 75

D. 120

31. Milkio sold some of his properties to three people as follows: Kavunga got $\frac{1}{4}$ while Meso got $\frac{1}{6}$ while Kioko received $\frac{1}{2}$ of the remainder. What fraction of the properties did he sell?

A. $\frac{11}{12}$

B. $\frac{17}{24}$

C. $\frac{5}{24}$

D. $\frac{7}{24}$

32. Which one of the following sets of measurements will form a right angled triangle?

A. 4cm, 5cm, 12cm

B. 8cm, 15cm, 20cm

C. 7cm, 12cm, 25cm

D. 10cm, 24cm, 26cm

33. The figure below shows a stack of cubes. The stack was painted all over.
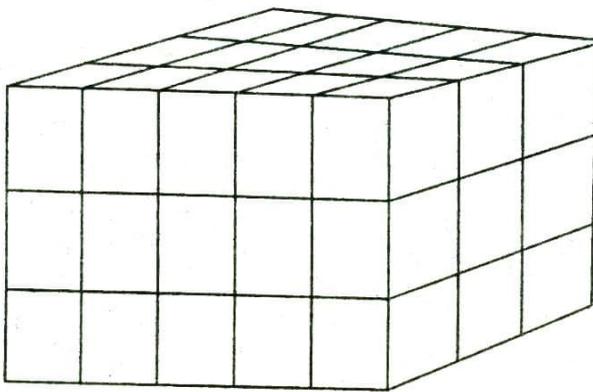
How many cubes had paint on two faces only?

A. 14

B. 22

C. 30

D. 45

34. A plane reached town Q from town R on a Sunday at 0240hrs after travelling for 6 hrs 55mins. On what day and time did it leave town R?

A. Sunday 7:45am

B. Sunday 4:15am

C. Saturday 7:45pm

D. Monday 4:15pm

35. The length of road is 4.5km. The road is represented on a map by 3cm. What is the scale of the map?

A. 1:1500000

B. 1:150000

C. 1:15000

D. 1:500

36. In the triangle below angle ABD is 30° and CDE=40°. Angle CED is 55°
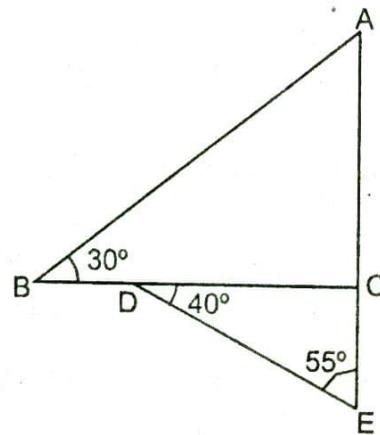
What is the size of angle BAC?

A. 55°

B. 85°

C. 95°

D. 125°

37. At a function the number of women was twice that of men. The number of children was half the total number of men and women. The function was attended by 270 people. How many children attended the function?

A. 180

B. 120

C. 90

D. 60

38. The table below shows the postal charges in shillings for small packets in a certain year.

Mass of packet	East Africa	Rest of Africa	Rest of the world
Not over 20g	49.00	54.00	68.00
Not over 100g	98.00	170.00	154.00
Not over 250g	187.00	214.00	275.00
Not over 500g	319.00	375.00	482.00
Not over 1kg	529.00	618.00	768.00
Not over 2kg	728.00	850.00	1019.00
Each additional 1kg upto 5kg	364.00	430.00	553.00

Mutunga sent the following packets

A 600g packet to Tanzania

A 4kg packet to Nigeria

A 260g packet to America

How much did he pay altogether?

A. Sh 2493

B. Sh 2501

C. Sh 2711

D. Sh 2721

39. Twelve people can complete a piece of work in 20 days. How many more days will 8 people working at the same rate require to complete the same work?

A. 30

B. 18

C. 10

D. $6\frac{2}{3}$

40. The following properties describe a certain quadrilateral
-*Diagonals are not equal*
-*Sum of interior angles is 360°*
-*Has a pair of parallel sides*
-*Diagonals do not bisect each other.*
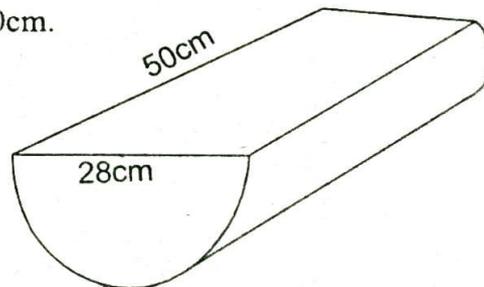Which quadrilateral has the above properties?
A. Square
B. Trapezium
C. Rectangle
D. Rhombus

41. The figure below represents a flower lawn.
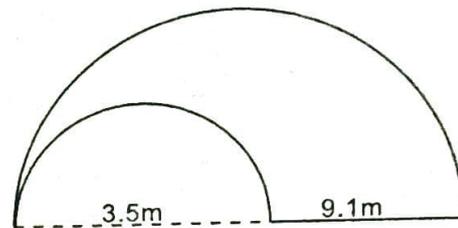
What is its perimeter? (Take $\pi=\frac{22}{7}$)
A. 32.4m
B. 34.4m
C. 41.4m
D. 37.9m

42. The figure below shows a half cylindrical solid whose diameter is 28cm and length 50cm.


What is its surface area in square centimetres. (Take $\pi=\frac{22}{7}$)
A. 4256
B. 4216
C. 15400
D. 30800

43. A rectangular plot of land is 80m long and the length of one diagonal is 100m. What is the area of the plot in hectares?
A. 0.8
B. 4.8
C. 48
D. 0.48

44. Makau bought f fruits. Obach bought 5q more fruits than Makau while Ongeri bought three times the total bought by both Makau and Obach. How many fruits were bought by the three people altogether?

A. 8f + 16q

B. 8f + 20q

C. 6f + 15q

D. 8f + 10q

45. The graph below shows Sarah's journey from town A to town B.
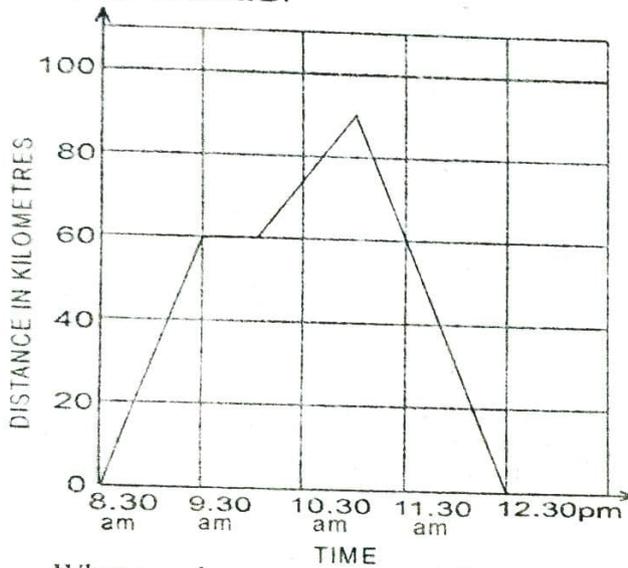

What was her average speed for the whole journey?

A. 18km/h

B. $22\frac{1}{2}$ km/h

C. 36km/h

D. 45km/h

46. Special porridge is made by mixing sorghum and millet in the ratio 2:3. Sorghum costs sh60 per kg and millet costs sh40 per kg. If Aisha made 10kg of special porridge, how much money did she spend on sorghum and millet altogether?

A. Sh 450

B. Sh 240

C. Sh 400

D. Sh 480

47. Muunda bought 40 plates for sh 4160. He sold all the plates at a profit of 120%. How much did he sell each plate?

A. Sh 104

B. Sh 124.80

C. Sh 228.80

D. Sh 152

48. Bongonko borrowed sh250000 from a bank that charged a simple interest at the rate of 20% per annum. How much interest did she earn altogether after $2\frac{1}{2}$ years?

A. Sh 125000

B. Sh 146000

C. Sh 375000

D. Sh 396000

49. Mutua left Machakos at 8:15am and took $1\frac{1}{3}$ hours to travel to Emali. He stayed in Emali for $2\frac{3}{4}$ hours then travelled back to Machakos. The time taken to travel back to Machakos was half the time taken to travel to Emali. At what time did he arrive at Machakos?

A. 12noon

B. 12:10pm

C. 1:00pm

D. 1:40pm

50. On triangle PQR drawn below, construct a perpendicular line from point Q to meet PR at S
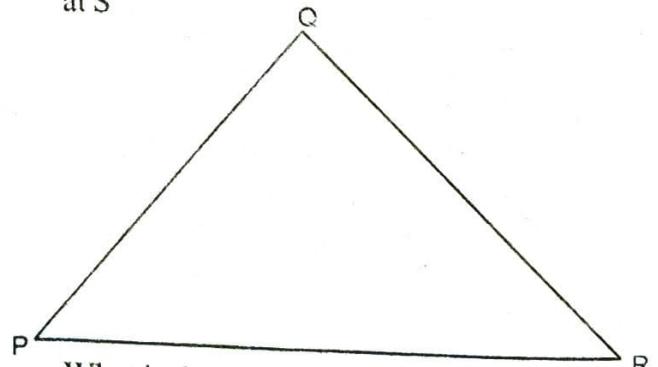
What is the size of angle SQR?

A. 40°

B. 45°

C. 55°

D. 145°