503

— MATHEMATICS —

Oct. 2019 – 2 hours

INSTRUCTIONS TO CANDIDATES (Please 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 an ordinary pencil.

5. Confirm that the answer sheet that you have been provided with has the following:
   YOUR INDEX NUMBER
   YOUR NAME
   NAME OF YOUR SCHOOL

6. Do not make any marks outside the boxes.

7. Keep the 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 and D. In each case only **ONE** of the four answers is correct. Choose the correct answer.

9. 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.

11. What is the value of $\dfrac{6(24-18)+6\times4}{6}$?
   A.   30
   B.   25
   C.   10
   D.   28

The correct answer is C (10)

On the answer sheet:

| 11 | [A] | [B] | [C] | [D] |

In the set of boxes numbered **11**, the box with the letter C 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.
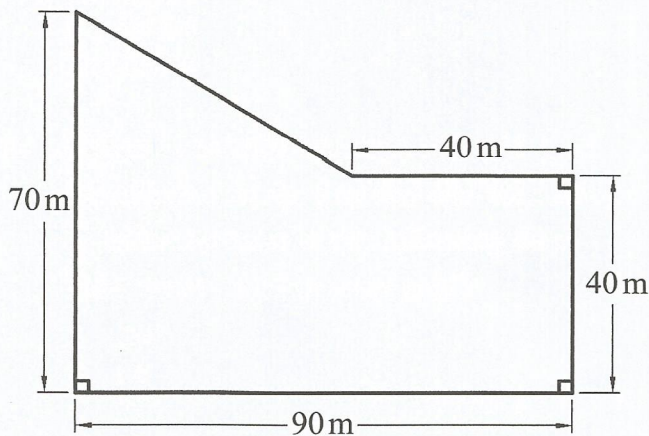
This Question Paper consists of 16 printed pages.

1. What is two million six thousand four hundred and nine in numerals?

   A. 2006409
   B. 2600409
   C. 2060409
   D. 2006049

2. Which one of the following statements is correct?

   A. $\frac{1}{2} < 0.5$

   B. $\frac{3}{5} > \frac{5}{8}$

   C. $0.63 < 0.36$

   D. $\frac{1}{5} > \frac{1}{10}$

3. What is the difference between the total values of the digits in the thousands and hundreds position in the number 789240?

   A. 200
   B. 8800
   C. 9000
   D. 9200

4. What is the value of
   $(49365 - 9000 \div 3 + 1035) - 1250 \times 4$?

   A. 52400
   B. 42400
   C. 40330
   D. 52960

5. A farmer had 280 chicken. He sold $\frac{5}{7}$ of the chicken on the first day and then sold $\frac{1}{5}$ of the remainder the following day. How many chicken were sold?

   A. 200
   B. 64
   C. 216
   D. 16

6. Which is the next number in the pattern?
   1, 3, 9, 27, 81, ___

   A. 135
   B. 108
   C. 162
   D. 243

7. A trader bought 21798 bags of maize in the first week. In the second week he bought 2476 bags less than what he had bought in the first week. In the third week he bought 542 bags more than he bought in the first week. How many bags of maize did he buy altogether?

   A. 68412
   B. 63460
   C. 62376
   D. 24816

8. What is the value of $80.4 - \dfrac{(15.46 + 4.54)}{0.4}$?

   A. 30.4
   B. 130.4
   C. 151
   D. 37.21

9. In a farm, on average every 6 cows produce 108 litres of milk per week. In five weeks the cows produced 2160 litres of milk. How many cows are in the farm?

   A. 432
   B. 120
   C. 24
   D. 18

10. What is 759.968 rounded of to the nearest hundredth?

    A. 759.96
    B. 759.9
    C. 759.97
    D. 760.0

11. In a race, Korir takes 12 seconds to run round a field. Muteti takes 18 seconds while Mwenda takes 27 seconds to run round the same field. If the three athletes start together, after how many seconds will they be together again?

    A. 3
    B. 57
    C. 5832
    D. 108

12. What is the square root of 17.64?

    A. 42
    B. 35.28
    C. 8.82
    D. 4.2

Working Space

13. The area of a rectangular piece of land is 220 square metres. Its width is 12.5 m. What is the perimeter of the piece of land?

    A. 17.6 m
    B. 30.1 m
    C. 60.2 m
    D. 70.4 m

14. A rectangle brick weighs 3 kg 750 g. How many such bricks can be loaded into a lorry which can carry 3 tonnes?

    A. 8
    B. 80
    C. 800
    D. 8000

15. Rono cycled from town R at an average speed of 72 km/h and took 3 hours 30 minutes to reach town S. Kepha cycled the same distance and took 4 hours. At what average speed was Kepha cycling?

    A. 18 km/h
    B. $33\frac{3}{5}$ km/h
    C. 63 km/h
    D. 252 km/h

16. The figure below represents a piece of land.

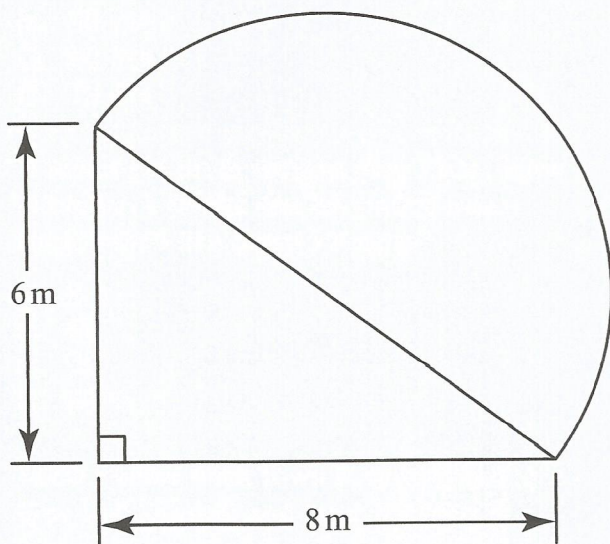   (Figure: a piece of land with a vertical left side of 70 m, a sloping top from the top-left down to a horizontal section, a 40 m horizontal segment, a 40 m vertical right side, and a 90 m bottom base.)

    — 40 m —

    70 m

    40 m

    — 90 m —

    What is the area of the piece of land?

    A. 6300 m²
    B. 4350 m²
    C. 3600 m²
    D. 6550 m²

Working Space

17. Muga left town P on Wednesday at
8.30 pm. He took 7 hours 50 minutes to
reach town Q. On what day and time in
24 hours clock system did he reach
town Q?

   A. Thursday 0420 h
   B. Wednesday 0420 h
   C. Wednesday 1620 h
   D. Thursday 1620 h

18. An open rectangular tank has a base
measuring 2.0 m by 1.5 m. It has a height
of 2.5 m. The surface of the tank was
painted. What was the total area painted?

   A. 7.5 m²
   B. 11.75 m²
   C. 20.5 m²
   D. 23.5 m²

19. A cylindrical container of diameter 8 cm
has a height of 35 cm. What is the volume
of the container in cubic centimetres?

   (Take $\pi = \frac{22}{7}$)

   A. 1760
   B. 7040
   C. 880
   D. 440

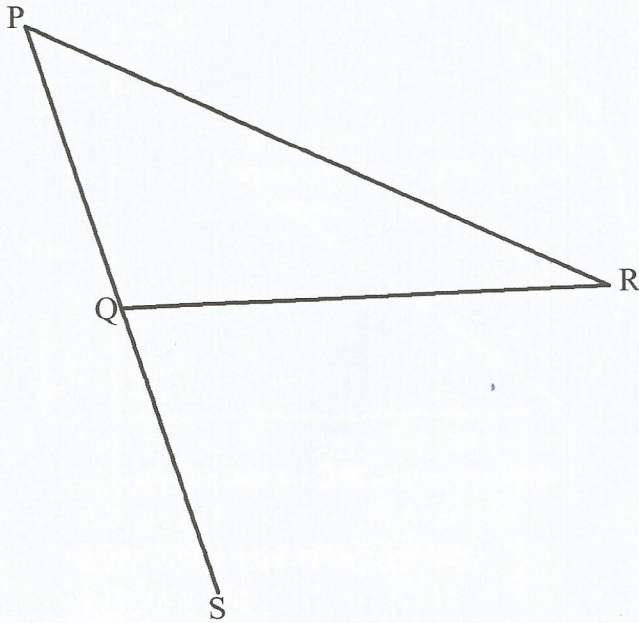**20.** The figure below represents a flower garden in the shape of a triangle and a semi-circle.

What is the area of the garden?

(Take $\pi = \dfrac{22}{7}$)

A. $102\dfrac{4}{7}$ m²

B. $29\dfrac{5}{7}$ m²

C. $63\dfrac{2}{7}$ m²

D. $39\dfrac{2}{7}$ m²

21. A cylindrical tank whose diameter is 140 cm has a height of 75 cm. How many litres of water can it hold when full?

(Take $\pi = \dfrac{22}{7}$)

A. 1155000

B. 115500

C. 11550

D. 1155

22. What is the value of $x + \dfrac{2n - r}{y}$ where

$x = 5$, $y = 2x$, $n = x + 9$ and $r = n + 6$?

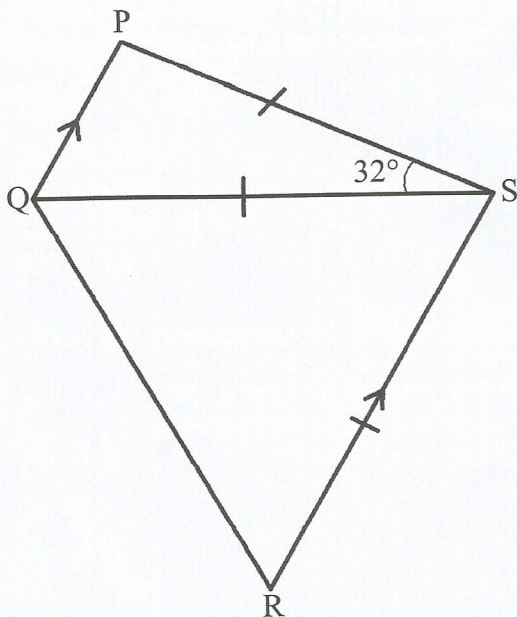A. $2\dfrac{1}{2}$

B. 2

C. $6\dfrac{1}{5}$

D. $5\dfrac{4}{5}$

23. Which one of the following expressions is the simplified form of $\dfrac{2(3x+y)+4x}{4(x+2y)-y}$

A. $\dfrac{7x+2y}{x+y}$

B. $\dfrac{10x+y}{4x+y}$

C. $\dfrac{7x+y}{2x+3y}$

D. $\dfrac{10x+2y}{4x+7y}$

24. Musa bought x bananas and Maria bought 4 bananas more than Musa. Otieno bought twice as many bananas as both Musa and Maria. The total number of bananas bought altogether was 30. Which one of the following equations can be used to find the number of bananas Musa bought?

A. $6x + 12 = 30$
B. $4x + 8 = 30$
C. $2x + 6 = 30$
D. $3x + 6 = 30$

25. What is the value of x in equation $\dfrac{3}{5}(2x+2) - 1 = 5$?

A. 2

B. $2\dfrac{1}{3}$

C. 4

D. $3\dfrac{2}{3}$

Working Space

26. In the figure below construct a perpendicular bisector of line PR. Let the line intersect PR at T and meet line QS at H?

What is the measure of line HT in cm?

A. 2.0 cm
B. 2.8 cm
C. 5.0 cm
D. 4.5 cm

27. In the figure below line QP is parallel to line RS, line QS = line SR and angle QSP = 32°.

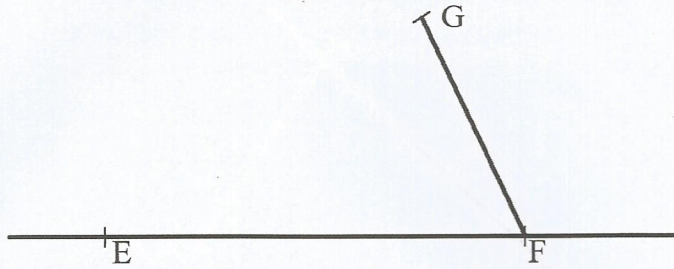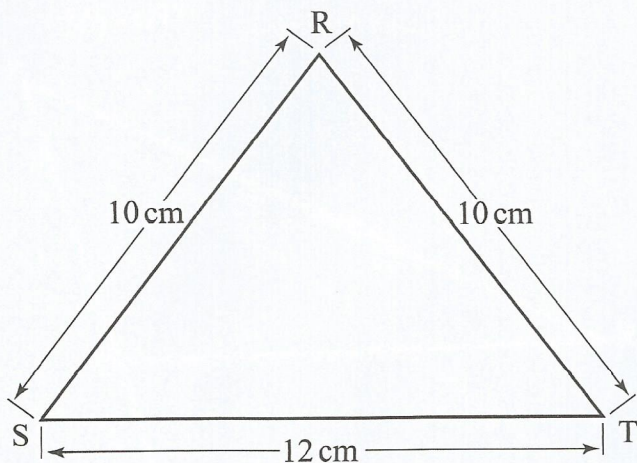What is the size of angle PQR?

A. 53°
B. 74°
C. 106°
D. 127°

28. The figure below is part of a parallelogram EFGH. Complete the parallelogram.

What is the length of half of the longer diagonal?

A. 3.7 cm
B. 5.6 cm
C. 6.0 cm
D. 8.2 cm

29. In a certain school, the number of girls was 240 and the total number of pupils was 540. What was the ratio of boys to girls in the school?

A. 9:4
B. 5:9
C. 4:5
D. 5:4

30. What is the value of

$1\frac{1}{2}+(2\frac{1}{4}\times3\frac{1}{2}\ of\ 12\div\frac{3}{4})$?
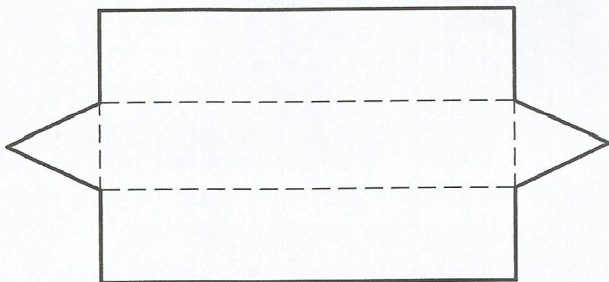
A. 210
B. $72\frac{3}{8}$
C. 126
D. $127\frac{1}{2}$

31. Triangle RST below is an isosceles triangle. The length RT = RS = 10 cm and ST = 12 cm.
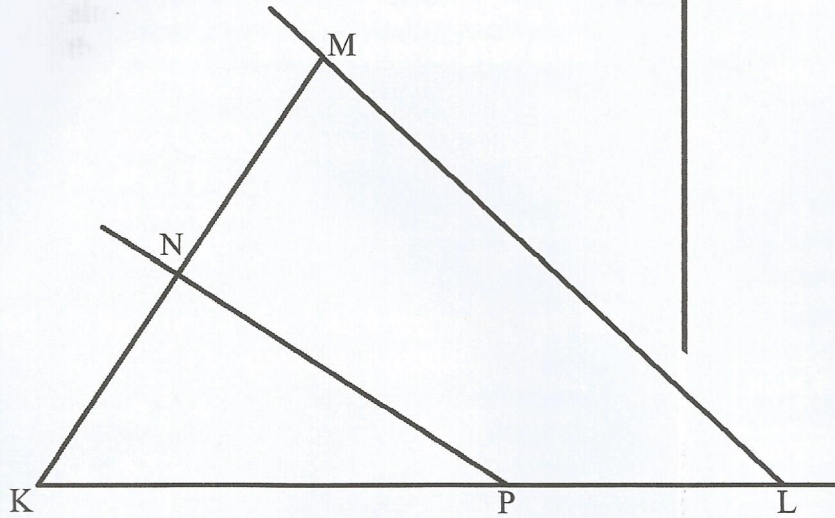

What is the area of the triangle?

A. 32 cm²
B. 48 cm²
C. 24 cm²
D. 60 cm²

32. The diagram below is a net of a solid.

Which one of the following statements is **true** about the number of faces, edges and vertices for the solid?

A. 5 faces, 10 edges and 10 vertices
B. 5 faces, 14 edges and 10 vertices
C. 5 faces, 9 edges and 6 vertices
D. 3 faces, 9 edges and 6 vertices

33. Which one of the following statements is **true** for both a trapezium and a rhombus?

A. Opposite sides are equal
B. Have only one pair of parallel sides
C. The sum of the interior angles is 360°
D. Diagonals bisect at right angles

34. The figure below has been drawn accurately.

What is the size of the obtuse angle NPL?

A. 33°
B. 180°
C. 213°
D. 147°

35. Amina bought 4 metres of material at sh 250 per metre, 6 buttons at sh 8 each, a sewing thread for sh 30 and made a dress. A similar dress costs sh 1500 in a shop. How much money did she save by making the dress?

A. sh 1078
B. sh 1172
C. sh 462
D. sh 422

36. A fruit vendor bought 300 pineapples at sh 210 for every 5 pineapples. She sold the pineapples at sh 60 each. How much profit did she make?

A. sh 30 600
B. sh 5 400
C. sh 1 800
D. sh 12 600

37. Kazungu paid sh 3 200 for an item after getting a discount of 20%. What was the marked price for the item.

A. sh 800
B. sh 2 560
C. sh 3 840
D. sh 4 000

Working Space

38. A salesman earns a basic salary of sh 40 000. He is also paid a commission of 3% of the value of goods he sells above sh 100 000. In one month he sold sh 20 000 items at sh 20 each. What was his total earnings that month?

    A. sh 9 000
    B. sh 43 000
    C. sh 49 000
    D. sh 52 000

39.

Mass	INLAND MAIL	INTERNATIONAL AIR MAIL		
		EAST AFRICA	REST OF AFRICA	EUROPE
	sh cts	sh cts	sh cts	sh cts
Not over 20g	35.00	45.00	55.00	60.00
Over 20g up to 50g	40.00	90.00	100.00	160.00
over 50g up to 100g	45.00	170.00	200.00	310.00
over 100g up to 250g	50.00	410.00	475.00	780.00

Weru posted the following letters:
1 letter weighing 101g to Kisumu in Kenya
1 letter weighing 19g to Uganda
2 letters weighing 80g each to Europe
1 letter weighing 50 g to Zambia

How much money did he pay for postage?

    A. sh 975
    B. sh 815
    C. sh 915
    D. sh 505

40. The hire purchase price of a sewing machine is made up of a deposit of sh 4 000 and 18 equal monthly instalments of sh 1 200 each. Wanja was allowed a 20% discount on the hire purchase price for buying the sewing machine on cash.

    How much money did she pay?

    A. sh 5 120
    B. sh 20 480
    C. sh 21 600
    D. sh 25 600

41. Wanyama deposited sh 84 000 in a bank which paid simple interest at the rate of 10% per annum. How much money altogether, did he get if he withdrew all the money with the interest earned at the end of 7 months?

A. sh 142 800
B. sh 4 900
C. sh 88 900
D. sh 92 400

Working Space

42. Which one of the following represents the ratio 2:5 expressed as a percentage?

A. $28\frac{4}{7}\%$

B. 40%

C. $71\frac{3}{7}\%$

D. 250%

43. Six people working for 5 days were paid a total of sh 6 000. How much more money would the same number of people be paid for 12 days?

A. sh 8400
B. sh 14 400
C. sh 20 400
D. sh 1 200

44. A group of farmers harvested 10 000 kg of coffee on the first day and 8 000 kg on the second day. What was the percentage decrease in the amount of coffee harvested?
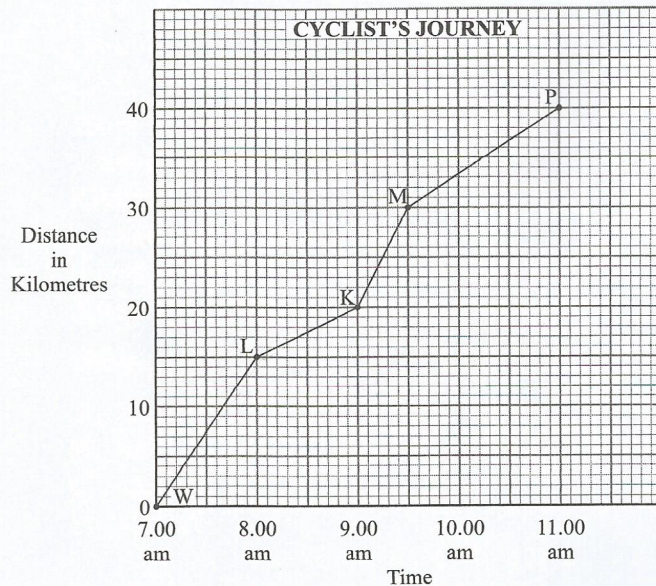
A. 20%
B. 24%
C. 80%
D. 125%

45. The table below shows sales of shoes in 5 days. The sales for Wednesday are not shown.

Days of week	Monday	Tuesday	Wednesday	Thursday	Friday
Number of pairs of shoes sold	30	36	–	45	42

The total number of pairs of shoes sold was 180. If a pie chart was to be drawn to represent this information, what angle would represent the number of pairs sold on Wednesday

A. 153°
B. 27°
C. 306°
D. 54°

46. The graph below represents a journey of a cyclist travelling from town W to town P through towns L, K and M?

Between which two towns was the cyclist travelling at the highest speed?

A. KM
B. LK
C. WL
D. MP

Working Space

47. The table below shows train fares from town N to town M:

	1st Class	2nd Class
Adults and children above 11 years	sh 3000	sh 700
Children between 3 years and 11 years	sh 1800	sh 400
Children under 3 years	Free	Free

A certain school arranged for a trip by train from town N to town M. 28 pupils aged 12 years, 15 pupils aged between 7 years and 10 years, 4 teachers and the head teacher.

The passengers occupied the following classes in the train:
1st class: The head teacher and one teacher.
2nd class: 3 teachers and all the pupils.

How much money did they pay for the trip altogether?

A. sh 33700
B. sh 38200
C. sh 27700
D. sh 31400

48. The distance in kilometres between towns P, Q, R and S is shown below.

P			
100	Q		
170	140	R	
210	180	90	S

What is the distance from town S to town P via town R?

A. 400 km
B. 210 km
C. 260 km
D. 330 km

49. The scale of a building plan is 1:200. What length, in cm, on the plan represents 5 metres of the building?

A. 0.4
B. 2.5
C. 0.025
D. 40

50. The number of pupils present in a class in a certain week is shown in the table below:

Days of the week	Monday	Tuesday	Wednesday	Thursday	Friday
Number of pupils	45	36	43	45	41

What was the mean attendance for the class that week?

A. 36
B. 42
C. 43
D. 45

Working Space