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# STANDARD EIGHT

SIGNAL 003

# SIGNAL EXAMS 2020
# THIRD K.C.P.E SIGNAL

## 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 the 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 marks outside the boxes.

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

9. 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.

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:**

**11.** What is 72.01 x 0.002 correct to 2 decimal places?
   A. 0.15
   B. 0.14000
   C. 0.14
   D. 0.10

The correct answer is **C (0.14)**

**On the answer sheet:**

| **1** ¡A ¡B C¡ D¡ ¡ | **11** ¡A ¡B ➡C¡ D¡ ¡ | **21** ¡A ¡B C¡ D¡ ¡ | **31** ¡A ¡B C¡ D¡ ¡ | **41** ¡A ¡B C¡ D¡ ¡ |

In the set of boxes numbered 11, the box with the letter **C** printed in it is marked.

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

**This question paper consists of 8 printed pages**

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1. What is 6090439 written in words?
   A. Sixty million ninety thousand four hundred and thirty nine.
   B. Six million ninety thousand four hundred and thirty nine.
   C. Sixty million nine thousand four hundred and thirty nine.
   D. Six million nine thousand four hundred and thirty nine.

2. What is the value of;

$$\frac{1\frac{1}{2}-\frac{1}{4}\times 1\frac{1}{3}}{1\frac{1}{3}+\frac{1}{6}\div\frac{1}{2}}?$$

   A. $1\frac{7}{20}$
   B. $1\frac{11}{20}$
   C. $1\frac{2}{3}$
   D. $\frac{7}{10}$

3. How many times is the total value of digit **8** greater than the total value of digit **2** in the number 498421?
   A. 7980
   B. 399
   C. 400
   D. 3990

4. Work out 2.56 x 4.6 and round off your answer to the nearest hundredths.
   A. 11.71
   B. 11.78
   C. 11.776
   D. 11.780

5. Arrange the fractions; $\frac{3}{5}$ , $\frac{7}{9}$ , $\frac{5}{8}$ , $\frac{2}{3}$ and $\frac{1}{2}$ from the largest to smallest.

   A. $\frac{7}{9} , \frac{2}{3} , \frac{3}{5} , \frac{5}{8} , \frac{1}{2}$

   B. $\frac{7}{9} , \frac{2}{3} , \frac{5}{8} , \frac{3}{5} , \frac{1}{2}$

   C. $\frac{1}{2} , \frac{3}{5} , \frac{5}{8} , \frac{2}{3} , \frac{7}{9}$

   D. $\frac{1}{2} , \frac{2}{3} , \frac{3}{5} , \frac{5}{8} , \frac{7}{9}$

6. A primary school has 600 pupils. Each pupil takes 2dl of milk twice a week. How many millilitres of milk do they take in one month?
   A. 960ml
   B. 48ml
   C. 480000ml
   D. 960000ml

7. What is $12\frac{1}{4}$ % converted to a decimal?
   A. 1225
   B. 12.25
   C. 0.1225
   D. 1.225

8. What is the simplified form of the expression below?

   $$\frac{2(4y+3)+3(6y+4)}{4(2y+1)+5(2y+4)}$$

   A. $\frac{26y+18}{18y-16}$

   B. $\frac{13y+3}{9y+4}$

   C. $\frac{26y+18}{18y-24}$

   D. $\frac{13y+9}{9y+8}$

9. What is the next number in the sequence below?

   $1\frac{1}{4} , 1\frac{3}{4} , 2\frac{1}{4} ,$ _____

   A. $3\frac{3}{4}$
   B. $2\frac{3}{4}$
   C. $3\frac{1}{4}$
   D. $4\frac{3}{4}$

10. What is the value of **y** in the equation below?

    $3(y+3)+y=23$

    A. $4\frac{1}{2}$
    B. 5
    C. $3\frac{1}{2}$
    D. 8

**11.** The table below shows Maureen's marks in five subjects.

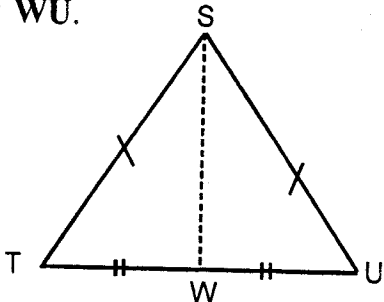| Subjects | Eng. | Kisw | Math | Sci | SST |
|----------|------|------|------|-----|-----|
| Marks out of 20 | 16 | 10 | 13 | 14 | 19 |

If the marks were represented on a pie chart, what angle would represent Mathematics?
A. $234^0$
B. $70^0$
C. $95^0$
D. $65^0$

**12.** A road 4.5km long was represented on a map by a line 3cm. What was the scale used on the map?
A. 1: 450000
B. 1: 450
C. 1: 150000
D. 1: 15000

**13.** What is the value of;
$\frac{3}{4}\left(\frac{3}{5}+\frac{1}{4}\right)\div\frac{2}{5}$?

A. $2\frac{29}{40}$

B. $\frac{5}{6}$

C. $1\frac{19}{32}$

D. $\frac{57}{200}$

**14.** The perimeter of the triangle below is 36cm. Line **ST** = **SU** = 10cm. Line **TW** = **WU**.



Calculate the area of triangle **STU**.
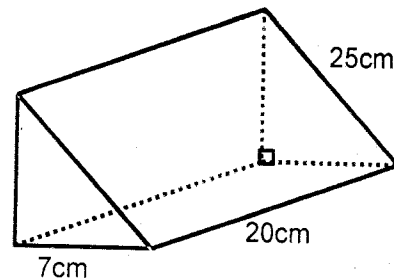A. 96cm²
B. 48cm²
C. 24cm²
D. 40cm²

**15.** Eighteen men working at the same rate can complete a piece of work in 10 days. How many more days would 12 men need to complete the same piece of work?
A. 5
B. 6
C. 15
D. 3

**16.** A bus carries 52 passengers. It makes 3 trips to and from town daily from Monday to Saturday. How many passengers does it carry in one week?
A. 936
B. 2548
C. 2184
D. 1872

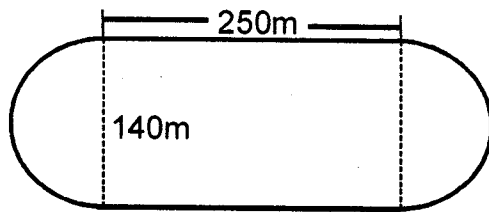**17.** What is the volume of the triangular prism below?



A. 1288cm³
B. 1680cm³
C. 3500cm³
D. 168cm³

**18.** What is the product of the faces, edges and vertices of an open square prism?
A. 576
B. 216
C. 480
D. 270

**19.** Kipchoge ran round the track shown below three times. What distance did he cover in kilometers?



A. 940km
B. 2.82km
C. 0.94km
D. 0.28km

**20.** The area of a trapezium is 252cm². Its height is 12cm. If one of the parallel lines is 18cm, what is the length of the other parallel line?

A. 14cm

B. 24cm

C. 42cm

D. 21cm

**21.** A salesman earns a basic salary of sh. 28000 per month. He is also paid a 2.5% commission on the amount of goods sold above sh. 100000. If he earned a total of sh. 36750 in a certain month, what was his total sales that month?

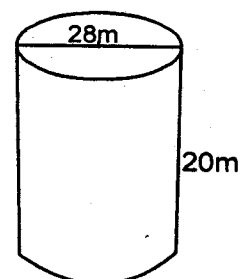A. Sh. 350000

B. Sh. 386 750

C. Sh. 450000

D. Sh. 486750

**22.** What is the least number that can be subtracted from 34348 to make it divisible by eleven?

A. 8
B. 6
C. 3
D. 1

**23.** What is the value of :

$$\frac{3x\,(x^2 - y)}{2y + x};$$

Given that $w = 3$, $x = w$ and $y = \frac{1}{2}x$?

A. $11\frac{1}{4}$
B. $7\frac{1}{2}$
C. $2\frac{1}{4}$
D. $16\frac{2}{5}$

**24.** Which one of the following sets of measurements do not form a right - angled triangle?

A. $1\frac{1}{2}$ cm, 2cm, $2\frac{1}{2}$ cm
B. 3cm, $7\frac{1}{5}$, $7\frac{4}{5}$ cm
C. 2.1cm, 7.2cm, 7.4cm
D. 1.4cm, 4.8cm, 5cm

**25.** A cylinder has a diameter of 28m and a height of 20m. What is its capacity in litres?



A. 123200
B. 1232000
C. 123200000
D. 12320000

26. What is the value of;

$$\sqrt{\frac{9+16}{(100-36)}} \ ?$$

   A. $\frac{5}{84}$

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

   C. $1\frac{3}{4}$

   D. $3\frac{1}{8}$

27. The mean of 8 numbers is 5.2. Seven of the numbers are 2, 4, 5, 5, 6, 2, 11. What is the median of the eight numbers?
   A. 6.6
   B. 6
   C. 5
   D. 5.5

28. Mutua went to visit his grandmother from 11th November 2003 upto 25th March 2004. How many days did he stay with his grandmother?
   A. 135
   B. 136
   C. 134
   D. 133

29. The table below shows the fare in shillings between different towns.

| Nairobi | | | | | | |
|---|---|---|---|---|---|---|
| 15 | Mlolongo | | | | | |
| 35 | 20 | Athi River | | | | |
| 40 | 25 | 10 | Machakos | | | |
| 55 | 42 | 25 | 20 | Masii | | |
| 75 | 65 | 45 | 40 | 25 | Wamuyu | |
| 100 | 93 | 72 | 68 | 52 | 33 | Kitui |

How much more would Wambui have to pay travelling from Wamuyu to Nairobi through Athi River than from Wamuyu straight to Nairobi?
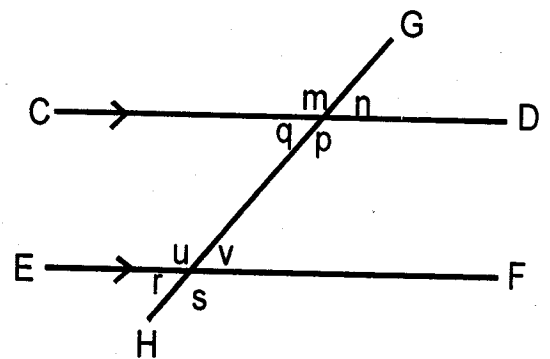   A. Sh. 15
   B. Sh. 5
   C. Sh. 75
   D. Sh. 80

30. What is the value of;

$$\frac{0.54 \times 0.24}{0.18 \times 0.16} \ ?$$

   A. 4.5
   B. 2.25
   C. 0.45
   D. 0.225

31. In the figure below, lines **CD** and **EF** are parallel and line **GH** is a transversal.



Which one of the following pairs of letters represent angles that are **not** equal?
   A. v and n
   B. s and p
   C. p and u
   D. u and q

32. Increase sh. 450 by 115%
   A. Sh. 1157.50
   B. Sh. 517.50
   C. Sh. 967.50
   D. Sh. 968.50

33. Simplify the following inequality;

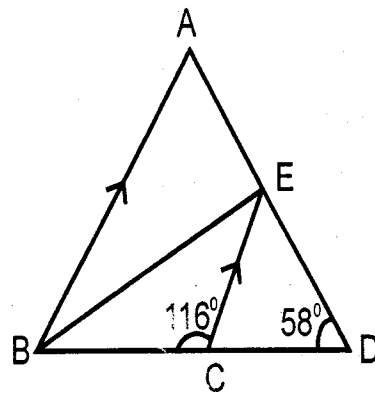$$\frac{2x+3}{2} < 6$$

   A. $x < 4\frac{4}{2}$

   B. $x > 4\frac{1}{2}$

   C. $x < 4$

   D. $x > 6$

34. A watch gains 5 seconds every hour. It was set right on Sunday 12.00 noon. What time would it show the following Tuesday at 12.00 midnight?
   - A. 12.05p.m
   - B. 12.05 a.m
   - C. 11.55 p.m
   - D. 11.55 a.m

35. A bus left Mombasa for Kisumu on Wednesday at 11.15 p.m. It took 15 hours 40 mins to reach Kisumu. Which day and time did it reach Kisumu?
   - A. Thursday 1455hrs
   - B. Wednesday 1455 hrs
   - C. Wednesday 0255hrs
   - D. Thursday 0255 hrs

36. A businessman deposited sh. 50000 in a bank that offered a simple interest at the rate of 12% p.a. If he withdrew all the amount after 18 months, how much did he withdraw?
   - A. Sh. 9360
   - B. Sh. 59000
   - C Sh. 9000
   - D. Sh. 59360

37. The ratio of boys to girls in a class is 4 : 5. If there are 5 more girls than boys, how many pupils are there in the class altogether?
   - A. 45
   - B. 25
   - C. 40
   - D. 20

38. The perimetre of a rectangular plot of land is 57.98m. If the width of the plot is 8.6m, what is its length?
   - A. 20.39m
   - B. 24.69m
   - C. 40.78m
   - D. 49.38m

39. In the figure below, line **AB** is parallel to **CE**. Line **BC = CE**, angle **BCE**= $116^0$ and angle **ADB** = $58^0$. What is the size of angle **BAD**?



   - A. $58^0$
   - B. $32^0$
   - C. $90^0$
   - D. $22^0$

40. Construct triangle **ABC** in which **BC** = 7cm, angle **ABC** = $55^0$ and angle **BCA** = $50^0$. Draw a circle that touches the vertices **A, B** and **C**. What is the radius of the circle?
   - A. 3.2cm
   - B. 1.7cm
   - C. 3.7cm
   - D. 4cm

**41.** Kitoto bought a television set in a shop which allowed a 10% discount on the marked price of each item. If he paid sh. 27000 for the T.V set, what was the marked price for the TV set?

A. Sh. 2700

B. Sh. 30000

C. Sh. 24300

D. Sh. 29700

**42.** Otieno bought the following items from a shop.

- 4 loaves of bread @ sh. 30.
- $1^{1}/_{2}$ kg of sugar @ sh. 80.
- $3^{3}/_{4}$ kg of rice at sh. 80.60 per kg.
- 2 packets of tea leaves for sh. 90.
- A 2 kg packet of maize flour @ sh. 85 per kg.

He paid for the items using five - sh. 200 notes. How much balance did he get?

A. Sh. 282.75

B. Sh 97.75

C. Sh. 197.75

D. Sh. 197.25

**43.** Noah drove a car a distance of 90km in 1 hour 15 minutes. What was the speed in m/s?
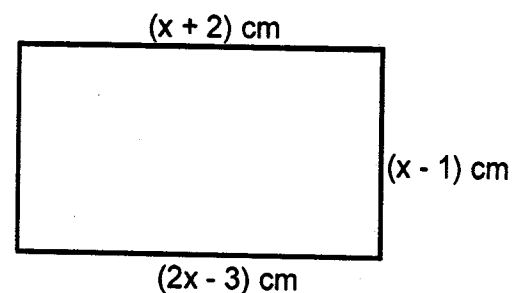
A. 42m/s

B. 20m/s

C. 112.5m/s

D. 1.2m/s

**44.** A farmer fenced a circular pond using 44 posts. If posts were in a uniform interval of 3m, what is the radius of the pond?

A. 42m

B. 21m

C. 10.5m

D. 84m

**45.** What is 1.33 expressed as a percentage?

A. 1.33%

B. 1330%

C. 133%

D. 13.3%

**46.** What is the perimeter of the rectangle drawn below?



(x + 2) cm

(x - 1) cm

(2x - 3) cm
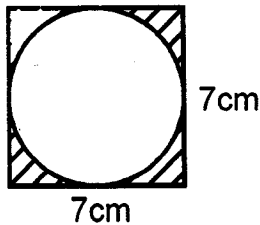
A. 19cm

B. 38cm

C. 11cm

D. 22cm

**47.** Construct triangle **PQR** where line
**PQ** = 8cm, angle **PQR** = 50⁰ and line
**QR** = 6cm. What is the measure of
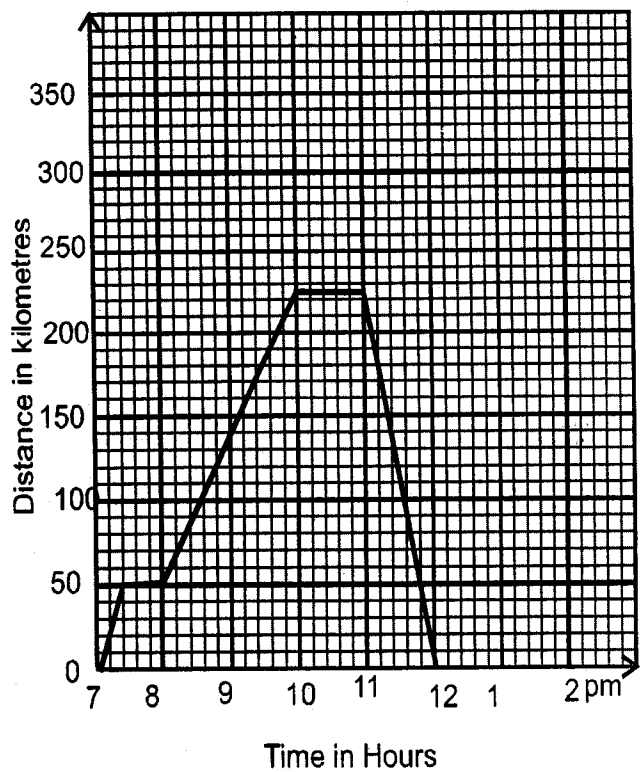line **PR**?

A. 6cm

B. 6.3cm

C. 5.2cm

D. 6.8cm

**48.** By how many times is the LCM of
36, 48 and 54 greater than their
GCD?

A. 72

B. 432

C. 426

D. 2592

**49.** What is the area of the shaded part
in the figure shown below?
(Take $\pi = {}^{22}/_7$)



7cm

7cm

A. 2.625cm²

B. 49cm²

C. 10.5cm²

D. 7.875cm²

**50.** The graph below shows the journey made
by a motorist in one day.



Time in Hours

What was the average speed for the
whole journey?

A. 90km/hr

B. 225km/hr

C. 105km/hr

D. 450km/hr