KCPE 2022 PREDICTION MATHEMATICS

1. Which of the following numbers is two hundred and two thousand and six thousandth?
   A. 202 6000
   B. 202.006
   C. 202 000.006
   D. 220 000.0006

2. What is the value of
   $54 - 3(9 - 2^2) + 8 \times 9 \div 3$?
   A. 63
   B. 15
   C. 78
   D. 112

3. What is the value of digit 7 in the product of 432 and 202?
   A. 87264
   B. 700
   C. 87000
   D. 7000

4. What is the value of
   $5(0.7^2 - 0.3^2) + 0.48 \div 0.06$?
   A. 2.8
   B. 10
   C. 13
   D. 1.6

5. In the year 2012 a farmer harvested 144 bags of maize. The following year the harvest decreased in the ration 3:4. What was the total number of bags harvested for the two years?
   A. 144
   B. 108
   C. 252
   D. 288

6. Twelfth February 2015 was on a Thursday. What day will be Thirteenth June the same year?
   A. Friday
   B. Thursday
   C. Sunday
   D. Saturday

7. Calculate the surface area of an open cuboid which is 12cm long 8cm wide and 6cm high.
   A. 336cm²
   B. 432cm²
   C. 336cm³
   D. 432cm³

8. What is 29487.4509 rounded off to three decimal places?
   A. 29,487.450
   B. 9487.451
   C. 294874.509
   D. 29,487.451

9. The fractions $\frac{6}{7}, \frac{5}{6}, \frac{2}{3}, \frac{4}{9}$ are to be arranged in order from the smallest to the largest. Which one of the following is the correct order?

   A. $\frac{6}{7}, \frac{5}{6}, \frac{2}{3}, \frac{4}{9}$ B. $\frac{2}{3}, \frac{4}{9}, \frac{5}{6}, \frac{6}{7}$

   C. $\frac{4}{9}, \frac{2}{3}, \frac{5}{6}, \frac{6}{7}$ D. $\frac{2}{3}, \frac{5}{6}, \frac{6}{7}, \frac{4}{9}$

10. What is the sum of LCM of 24, 36 and 48 and H.C.F of 12, 18 and 24?
    A. 144
    B. 150
    C. 138
    D. 216

11. What is twice the value of
    $\frac{2}{3}$ of $\left(\frac{1}{3} - \frac{1}{5}\right) \div \frac{2}{9}$?

    A. $\frac{4}{5}$ B. $\frac{2}{5}$

    C. $\frac{16}{405}$ D. $\frac{4}{10}$

12. Construct a triangle XYZ in which line XY=5cm angle XYZ = 86° and angle ZXY = 55°. Drop a perpendicular from point Y to meet line XZ at M. What is the length of line YM?
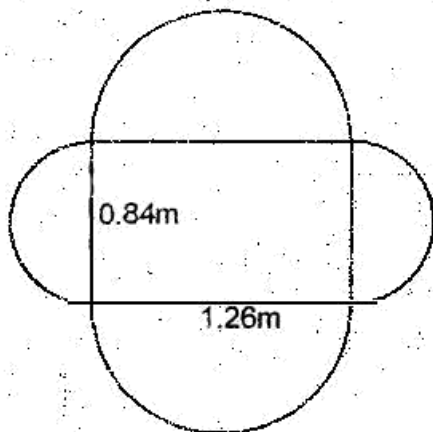
A. 4.7cm   B. 6cm

C. 5.2cm   D. 4.1cm

13. In a school $\frac{1}{8}$ of the pupils were absent on Monday. On Tuesday $\frac{1}{6}$ of the pupils were absent. If there were twenty more pupils absent on Tuesday than on Monday, what is the population of the school?

A. 120   B. 480

C. 240   D. 720

14. An empty carton has a mass of 2kg. 50 sachets of Omo each weighing 250 grams fill one carton. What is the total mass of 200 such cartons?

A. 2900 tonnes   B. 290 tonnes

C. 2.9 tonnes   D. 0.29 tonnes

15. The diagram below represent a table mat. What is its perimeter in cm?

A. 330cm   B. 1080cm

C. 750cm   D. 660cm

16. At Onyango's farm there are 60 cows, 150 sheep 240 chicken and 90 goats. If this information was to be represented on a pie chart, what angle would represent the difference between cows and goats?

A. 20°   B. 40°

C. 60°   D. 100°

17. What is the value of x in the equation?

$$\frac{3}{4} - \frac{2(x-6)}{4} = 2x - 3$$

A. $\frac{3}{10}$ B. $6\frac{1}{2}$

C. $2\frac{7}{10}$ D. $\frac{1}{2}$

18. Wafula walked from home to the hospital at a speed of 5km/hr and took 1 hour 30min. He later walked back home at a speed of 4.5km/hr. How long did the whole journey take?

A. 2hrs 40min   B. 3hrs

C. 4hrs 10min   D. 3hrs 10min

19. The temperature of ice was -21°c. The ice was heated until the final temperature was 37°c below the boiling point. What was the temperature rise?
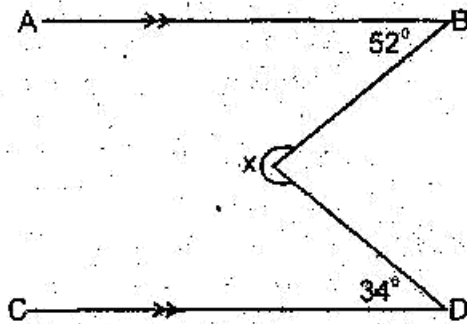
A. 58°c

B. 84°c

C. 63°c

D. 16°c

20. The table below shows the number of pupils in MUTHAIGA ACADEMY from class one to class four for the years 2010, 2011, 2012 and 2013.

CLASS	YEAR			
	2010	2011	2012	2013
Std 1	192	202	186	160
Std 2	150	186	196	184
Std 3	125	146	180	188
Std 4	175	119	145	164

How many pupils who started class one year 2010 reached class four in the school?

A. 164

B. 175

C. 160

D. 145

21. In the figure below line AB is parallel to line CD

Find the size of the reflex angle marked X
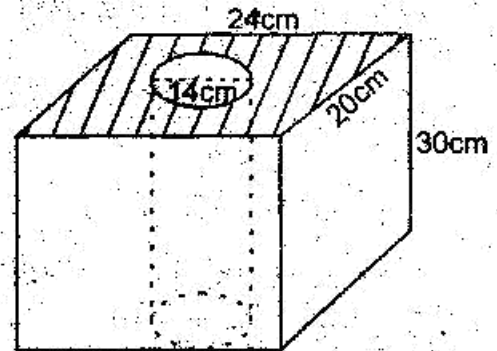A. 86°
B. 264°
C. 94°
D. 274°

22. What is the value of

$$\sqrt{\frac{144+25}{(100-64)}} ?$$

A. $4\frac{25}{36}$

B. $8\frac{1}{2}$

C. $2\frac{1}{6}$

D. $6\frac{1}{2}$

23. A sales man earns a basic salary of shs.15 000 per month. He also earns 3% commission on goods she sells above shs.200 000. In one month he earned a total of shs.27,000. How much was the total sales for that month?
A. shs.400 000
B. shs.600 000
C. shs.240 000
D. shs.227 000

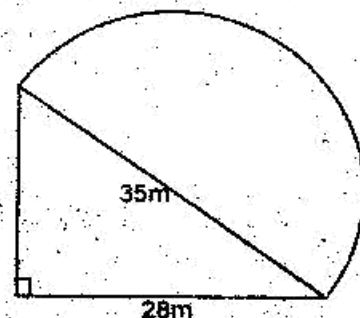**24.** The diagram below shows a rectangular wooden block. A cylindrical hole has been made through the block.

What is the volume of the wooden block?
A. 9780cm³   B. 14400cm³
C. 4620cm³   D. 19020cm³

25. Tom, Thomas and Tony bought oranges in a market. Tom bought Y oranges. Tony bought two and a half times what Tom bought. Thomas bought three oranges less than what both Tom and Tony bought. Which expression shows the total number of oranges bought by the three boys?
A. 6y - 3
B. 7y + 3
C. 7y - 3
D. 5y + 3

26. The figure below shows a flower garden in the shape of right angled triangle and a semi-circle.
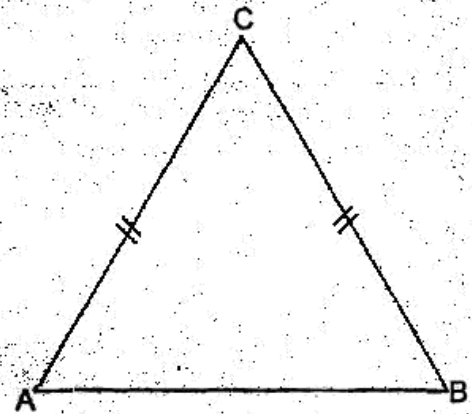

What is the area of the flower garden?
(Take $\pi = \frac{22}{7}$)

A. $1256\frac{1}{2}$ B. $1461\frac{1}{4}$
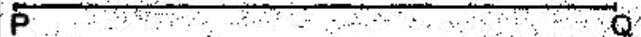
C. $481\frac{1}{2}$ D. $775\frac{1}{4}$

27. Komen bought 300 mangoes at shs.3 per mango. He later packed them in piles of six mangoes per pile and sold them at shs. 30 per pile. What percentage profit did Komen make?
A. 60%
B. $66\frac{2}{3}$%
C. 40%
D. $33\frac{1}{3}$%

28. Eight men can weed a garden in twelve days. How much longer would it take six men working at the same rate?
A. 16 days
B. 4 days
C. 8 days
D. 12 days

29. Karanja uses 0.1 of his salary on rent, 0.25 on school fees, 0.05 on food. He also uses 0.5 of the remainder on transport and saves the rest. If Karanja's salary is shs.20 000. How much does he save?
A. shs.6 000
B. shs.2 000
C. shs.10 000
D. shs.4 000

30. On a map whose scale is 1:50 000 a piece of land is represented by a rectangle 5cm by 3cm. What is the actual area of the land in hectares?
A. 0.375ha
B. 3.75ha
C. 37.5ha
D. 375ha

31. A motorist left Mombasa on Saturday 9:30pm for a journey to Malava. If the journey took exactly $2\frac{1}{4}$ days, on what day and time did he reach Malava?
A. Monday 3:30am
B. Tuesday 3:30am
C. Tuesday 3:30pm
D. Monday 3:30pm

32. The diagram below shows an isosceles triangle whose perimeter is 50cm.

Line AC=line BC = 17cm. What is the area of the triangle?
A. 240cm²
B. 272cm²
C. 120cm²
D. 255cm²

33. On the line drawn below construct a parallelogram PQRS such that line PS= line QR = 6cm. Angle QPS = 65⁰. Drop a perpendicular from point S to meet line PQ at Y.

Measure the size of angle PSY
A. 115⁰
B. 24⁰
C. 156⁰
D. 34⁰

34. The cash price of a generator is shs.24.000. The hire purchase price is 25% more than the cash price. Juma bought it on hire purchase by paying 25% of the hire purchase price as deposit and the rest in 12 equal monthly instalment. How much was each instalment?
A. shs.1 875
B. shs.1 500
C. shs.1 250
D. shs.2 500

35. The table below shows the fares charged by 2NK Sacco along Nairobi - Nakuru route.

NAIROBI					
200	NAIVASHA				
250	70	GILGIL			
300	180	50	ST. MARY'S		
340	200	80	40	PIPELINE	
400	250	120	80	30	NAKURU

Janet, her husband and their two sons travelled from Nairobi to Nakuru but stopped at St. Mary's hospital to check on a friend and later continued with the journey to Nakuru. How much fare did they pay in total if the children paid half the fare?
A. shs.1 140
B. shs.900
C. shs.1 200
D. shs.1 260

36. If $x = 3$ and $y = x+2$ what is the value of
$$\frac{3(x + 2y)}{13} + 2xy ?$$
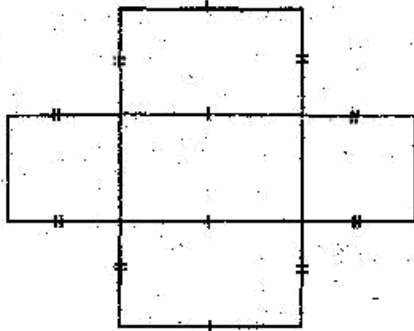
A $5\frac{4}{13}$

B 33

C $2\frac{3}{13}$

D 69

37. A cylindrical tank has a diameter of 0.7m and a height 2.1m. How many decilitres of water does it hold when full?
A. 323400dl
B. 808.5dl
C. 8085dl
D. 3234dl

38. Seven boys weighed
43, 41, 47, x, 39, 41, 42
If the mean of their weight is 43, what is the median weight?
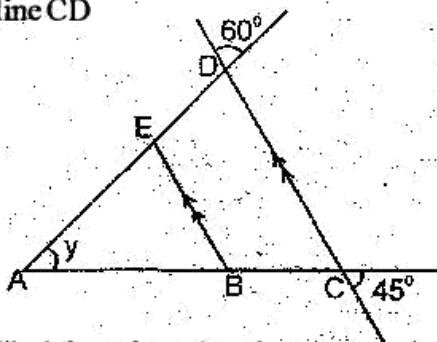A. x
B. 42
C. 47
D. 39

39. Munya paid shs.13 500 for a TV set after getting 10% discount. How much would he have paid if he was allowed a 15% discount on the same TV?
A. shs.12 750
B. shs.750
C. shs.15 000
D. shs.1 500

40. A cylindrical container has a circumference of 88cm and a height of 20cm. What is the surface area of the cylinder when closed?
A. 1760cm²
B. 1232cm²
C. 2376cm²
D. 2992cm²

41. The net below will be used to form a

- A. An open rectangular prism.
- B. An open square prism.
- C. A closed rectangular pyramid.
- D. A closed rectangular prism.

42. Kyalo deposited shs.30,000 in a financial institution that gives simple interest at the rate of 5% p.a. How much money was in his account at the end of the third year?
- A. shs.4 500
- B. shs.34 500
- C. shs.3 450
- D. shs.36 000

43. The area of a rectangle is 120cm². What is the length of its diagonal if one of the sides is 8cm?
- A. 17cm
- B. 15cm
- C. 32cm
- D. 24cm

44. In the figure below line BE is parallel to line CD

Find the value of angle y
- A. 105⁰   B. 60⁰
- C. 45⁰   D. 75⁰

45. Three classes contributed money as follows to help purchase story books for the library. Class six contributed x shillings. Class seven contributed shs.3 200 more than class six. Class eight contributed shs.4 300 less than what both class six and seven contributed. If a total of shs.19 200 was contributed which of the following equation can be used to get the value for x?
- A. $4x + shs.4300 = shs.19200$
- B. $3x + shs.2100 = shs.19200$
- C. $4x + shs.2100 = shs.19200$
- D. $4x - shs.1100 = shs.19200$

46. The price of an article in a shop was shs.9000. It was increased by 10% and later the price reduced by 20%. What is the final price of the article?
- A. shs.9 900
- B. shs.7 920
- C. shs.10 890
- D. shs.9 720

47. The following are characteristics of quadrilaterals
- (i) *All angles are right angles*
- (ii) *Diagonals bisect at right angle*
- (iii) *One pair of parallel sides*
- (iv) *Diagonals not equal*
- (v) *All sides are equal*
- (v) *Sum of interior angles adds upto 360⁰*

Which of the characteristics above are common for both Rhombus and a square?
- A. (i) (ii) (iv)
- B. (ii) (iv) (vi)
- C. (iv) (v) (vi)
- D. (ii) (v) (vi)

48. The table below shows the charges of sending money using money order

Range	Ordinary Money Order	Express Money Order
Upto 2 000	125	215
2 001 - 5 000	190	250
5 001 - 10 000	270	325
10 00 - 20 000	335	410
2000 - 30 000	405	530

Chepng'eno sent the following money order shs. 13 500 through ordinary money order, shs. 24 500 through express money order. How much money did she pay at the post office?
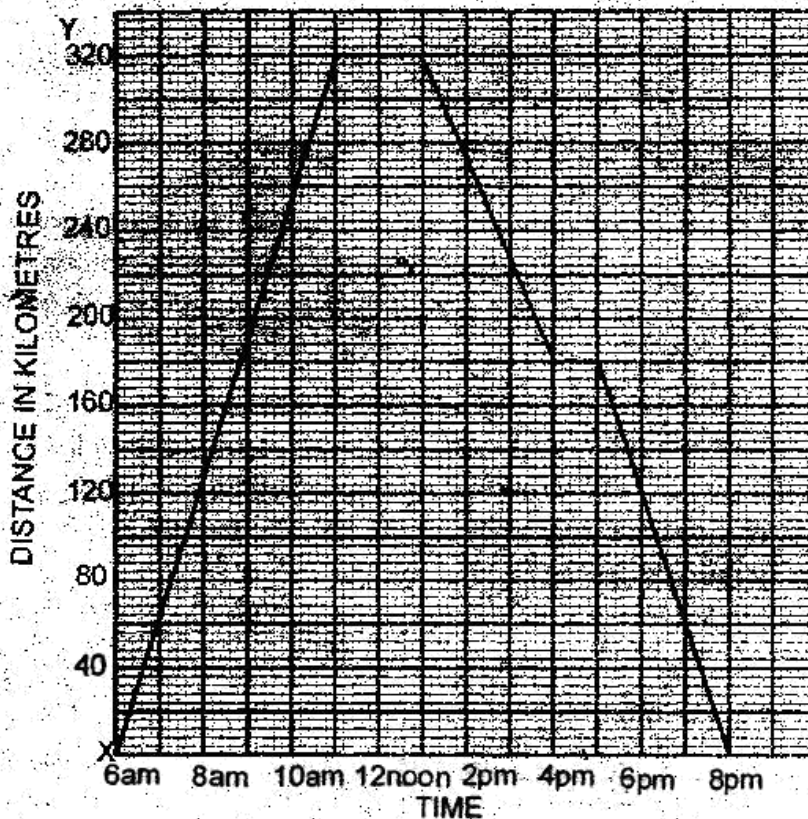
A. shs. 865
B. shs. 38 865
C. shs. 38 000
D. shs. 38 740

49. Simplify the inequality below

$$\frac{4p-6}{2} < \frac{5p+4}{3}$$

A. $p > 13$
B. $p < 26$
C. $p < 13$
D. $p > 26$

50. The graph below shows a journey by matatu from town **x** to town **y** and back.

What is the average speed for the return journey?

A. $22\frac{6}{7}\,km/h$　　B. $45\frac{3}{7}\,km/h$　　C. $91\frac{3}{7}\,km/h$　　D. $27\,km/h$