KENYA NATIONAL EXAMINATION AND ASSESSMENT PREDICTION SERIES

ENDTERM 2 ASSESSMENT 2025

GRADE 7

MATHEMATICS

MARKING SCHEME

SECTION A: (20 marks)

- 1. What is the place value of digit 7 in 874,325?
- A. 7,000
- B. 70,000
- C. 700
- D. 700,000

Answer: B

Explanation:

In the number 874,325, the digit 7 is in the ten-thousands place. Therefore, its place value is 70,000.

2. What is the LCM of 6 and 8?

A. 24

B. 48

C. 12

D. 18

Answer: A

Explanation:

To find the Least Common Multiple (LCM) of 6 and 8, we can list their multiples:

Multiples of 6: 6, 12, 18, 24, 30, ...

Multiples of 8: 8, 16, 24, 32, ...

The smallest common multiple is 24.

- 3. Which of these numbers is a prime number?
- A. 15
- B. 21
- C. 19
- D. 27

Answer: C

Explanation:

A prime number is a natural number greater than 1 that has no positive divisors other than 1 and itself.

- A. 15 = 3 × 5 (not prime)
- B. 21 = 3 × 7 (not prime)
- C. 19 (only divisible by 1 and 19, so it is prime)
- D. 27 = 3 × 9 (not prime)
 - 4. A school had 240 learners. Each classroom holds 40 pupils. How many classrooms are needed, and how many learners will be in the last classroom if one is not full?
- A. 6 classrooms, 0 pupils left
- B. 5 classrooms, 40 pupils left
- C. 6 classrooms, 0 pupils left
- D. 7 classrooms, 0 pupils left

Answer: C

Explanation:

Number of classrooms needed = Total learners / Learners per classroom

Number of classrooms = 240 / 40 = 6 classrooms.

Since 240 is perfectly divisible by 40, there are 0 pupils left in the last classroom (meaning all classrooms are full).

5. Convert 0.625 to a fraction in simplest form.

A. 5/8

- B. 3/4
- C. 2/5
- D. 7/10

Answer: A

Explanation:

To convert a decimal to a fraction: 0.625 = 625/1000

Now, simplify the fraction by dividing both the numerator and denominator by their greatest common divisor.

Divide by 5: 625/1000 = 125/200

Divide by 5 again: 125/200 = 25/40

Divide by 5 again: 25/40 = 5/8

6. 4.5 kg is equal to:

A. 450 g

- B. 4,050 g
- C. 4,500 g

D. 450,000 g

Answer: C

Explanation:

We know that 1 kg = 1000 g.

So, 4.5 kg = 4.5 × 1000 g = 4,500 g.

7. Multiply: 2.4×3.6

A. 6.84

B. 8.64

C. 7.24

D. 9.24

Answer: B

Explanation:

To multiply decimals, first multiply them as whole numbers, then place the decimal point in the product.

 $24 \times 36 = 864.$

Since there is one decimal place in 2.4 and one in 3.6, there will be a total of two decimal places in the product.

So, 2.4 × 3.6 = 8.64.

8. Which of the following correctly represents 104 in Roman numerals?

A. CIIII

B. CXI

C. CIV

D. CIVI

Answer: C

Explanation:

Roman numerals:

C = 100

IV = 4 (5 - 1)

So, 104 in Roman numerals is CIV.

9. What is the square root of 121?

A. 11

B. 22

C. 144

D. 111

Answer: A

Explanation:

The square root of 121 is the number that, when multiplied by itself, gives 121.

11 × 11 = 121. So, √121 = 11.

10. Solve: $5^2 - 4 \times$	3
A. 13	
B. 17	
C. 19	
D. 25	

Answer: A

Explanation:

Follow the order of operations (PEMDAS/BODMAS):

Exponents: $5^2 = 25$

Multiplication: $4 \times 3 = 12$

Subtraction: 25 – 12 = 13

Use the information below to answer question 11, 12 and 13.

A Grade 7 class of 36 pupils chose their favourite games:

Game	Number of Learners
Football	12
Volleyball	6
Netball	9
Athletics	9

11. What angle in the pie chart represents football?

A. 90°

B. 120°

C. 100°

D. 110°

Answer: B

Explanation:

Total number of learners = 12 + 6 + 9 + 9 = 36 pupils.

Angle for Football = (Number of Football learners / Total learners) × 360°

Angle for Football = $(12 / 36) \times 360^{\circ} = (1/3) \times 360^{\circ} = 120^{\circ}$.

12. What is the total angle representing Netball and Athletics?

A. 100°

B. 120°

C. 180°

D. 200°

Answer: C

Explanation:

Number of learners for Netball = 9

Number of learners for Athletics = 9

Total learners for Netball and Athletics = 9 + 9 = 18

Total angle for Netball and Athletics = $(18 / 36) \times 360^{\circ} = (1/2) \times 360^{\circ} = 180^{\circ}$.

13. Which game is liked by the least number of pupils?

- A. Volleyball
- B. Football
- C. Netball
- D. Athletics

Answer: A

Explanation:

From the table:

Football: 12 learners

Volleyball: 6 learners

Netball: 9 learners

Athletics: 9 learners

The least number of pupils (6) chose Volleyball.

14. What is the area of a triangle with base 6 cm and height 10 cm?

Answer: B (Assumed from previous context where B was 30 cm² for this question)

Explanation:

The formula for the area of a triangle is: Area = $(1/2) \times base \times height$

Given base = 6 cm and height = 10 cm.

Area = $(1/2) \times 6$ cm $\times 10$ cm = 3 cm $\times 10$ cm = 30 cm².

15. What is the mode in the set: 4, 7, 7, 2, 7, 3, 4?

A. 4

B. 7

C. 3

D. 2

Answer: B

Explanation:

The mode is the number that appears most frequently in a set of data.

In the set {4, 7, 7, 2, 7, 3, 4}:

4 appears 2 times.

7 appears 3 times.

2 appears 1 time.

3 appears 1 time.

The number 7 appears most often, so the mode is 7.

16. Convert ³/₄ into a percentage.

A. 75%

B. 80%

C. 65%

D. 70%

Answer: A

Explanation:

To convert a fraction to a percentage, multiply by 100%.

(3/4) × 100% = 3 × 25% = 75%.

17. If 5 oranges cost Ksh 40, what is the cost of 8 oranges?

A. Ksh 60

B. Ksh 64

C. Ksh 70

D. Ksh 72

Answer: B

Explanation:

First, find the cost of one orange:

Cost of 1 orange = Ksh 40 / 5 = Ksh 8.

Then, find the cost of 8 oranges:

Cost of 8 oranges = $8 \times Ksh 8 = Ksh 64$.

18. A tank is ³/₄ full and contains 300 litres of water. What is its total capacity?

- A. 450 litres
- B. 400 litres
- C. 600 litres
- D. 500 litres
- Answer: B

Explanation:

Let the total capacity of the tank be X litres.

We are given that (3/4) of the tank is 300 litres.

So, (3/4) × X = 300

To find X, multiply both sides by (4/3): X = $300 \times (4/3) = 1200 / 3 = 400$ litres.

19. Find the value of x in: 2x - 3 = 11

- A. 5
- B. 7
- C. 8
- D. 6

Answer: B

Explanation:

To solve for x:

Add 3 to both sides: 2x - 3 + 3 = 11 + 3 => 2x = 14

Divide both sides by 2: $x = 14 / 2 \Rightarrow x = 7$.

20. What is the volume of a cuboid 5 cm long, 4 cm wide, and 3 cm high?

A. 12 cm³

B. 60 cm³

- C. 20 cm³
- D. 80 cm³
- Answer: B

Explanation:

The formula for the volume of a cuboid is: Volume = length × width × height

Volume = 5 cm \times 4 cm \times 3 cm = 20 cm² \times 3 cm = 60 cm³.

SECTION B: STRUCTURED QUESTIONS (80 marks)

21. A school has 1,200 learners. 480 are boys. What percentage of the learners are girls? (2 marks)

Explanation:

Find the number of girls: Total learners = 1200 Number of boys = 480 Number of girls = Total learners - Number of boys = 1200 - 480 = 720 girls. Calculate the percentage of girls: Percentage of girls = (Number of girls / Total learners) × 100% Percentage of girls = (720 / 1200) × 100% = 0.6 × 100% = 60%.

Answer: 60%

22. A piece of card was cut into the shape shown below. Find:

a) Its area. (2 marks)

Explanation:

Area of the semi-circle= $\frac{1}{2}\pi r^2$

=1/2 ×22/7×3.5×3.5=19.25cm²

Area of a rectangle = length × width

Given length = 30 cm and width = 20 cm.

Area = $30 \text{ cm} \times 7 \text{ cm} = 210 \text{ cm}^2$.

210cm²+19.25cm²=229.25cm²

Answer: 229.25 cm²

b) Its perimeter. (2 marks)

Explanation:

Perimeter of a rectangle = 2length + width)

Given length = 30 cm and width = 7 cm.

Perimeter = 30 cm+30cm+7cm+1/2Пd

67+1/2×22/7×7

Answer: 77.99 cm

23. Find the average of: 72%, 84%, 90%, and 66%. (2 marks)

Explanation:

Average = Sum of values / Number of values

Sum of values = 72 + 84 + 90 + 66 = 312

Number of values = 4

Average = 312 / 4 = 78%.

Answer: 78%

24. A trader bought 10 bags of maize at Ksh 2,700 each and sold each at Ksh 3,200. Calculate:

a) Total buying price (2 marks)

Explanation:

Total buying price = Number of bags × Buying price per bag

Total buying price = $10 \times \text{Ksh} 2,700 = \text{Ksh} 27,000$.

Answer: Ksh 27,000

b) Total profit (2 marks)

Explanation:

First, calculate the total selling price:

Total selling price = Number of bags × Selling price per bag

Total selling price = 10 × Ksh 3,200 = Ksh 32,000.

Then, calculate the total profit:

Total profit = Total selling price - Total buying price

Total profit = Ksh 32,000 - Ksh 27,000 = Ksh 5,000.

Answer: Ksh 5,000

c) Percentage Profit made (2 marks)

Explanation:

Percentage Profit = (Profit / Buying Price) × 100% Percentage Profit = (Ksh 5,000 / Ksh 27,000) × 100% ≈ 18.52% (rounded to two decimal places). Answer: Approximately 18.52%

25. A cuboid has dimensions 6 cm, 5 cm, and 2 cm. Find its volume. (2 marks)

Explanation:

Volume of a cuboid = length × width × height

Volume = $6 \text{ cm} \times 5 \text{ cm} \times 2 \text{ cm} = 30 \text{ cm}^2 \times 2 \text{ cm} = 60 \text{ cm}^3$.

Answer: 60 cm³

26. Solve the equation: 4(x+2) = 20 (2 marks)

Explanation:

4(x+2) = 20

Divide both sides by 4: $(4(x+2))/4 = 20/4 \Rightarrow x+2 = 5$

Subtract 2 from both sides: x+2-2 = 5-2 = x = 3.

Answer: x=3

27. A shopkeeper gives a 10% discount on an item costing Ksh 2,000. (3 marks)

a) How much is the discount?

Explanation:

Discount amount = 10% of Ksh 2,000

Discount amount = (10/100) × 2,000 = 0.10 × 2,000 = Ksh 200.

Answer: Ksh 200

b) What is the selling price?

Explanation:

Selling price = Original price - Discount amount

Selling price = Ksh 2,000 - Ksh 200 = Ksh 1,800.

Answer: Ksh 1,800

28. What number is twenty million, five hundred and twenty seven thousand, two hundred and five? (1 mark) **Explanation**:

Break down the number by place value:

Twenty million: 20,000,000

Five hundred twenty seven thousand: 527,000

Two hundred and five: 205

Adding them together: 20,000,000 + 527,000 + 205 = 20,527,205.

Answer: 20,527,205

29. Write down the place value of seven in the number below (1 mark)

60251.789

Explanation:

In the number 60251.789, the digit 7 is immediately to the right of the decimal point. This position represents the tenths place. Answer: Tenths (or 0.7)

30. Round off the following numbers to the nearest hundred thousands (2 marks)

a) 292,304

Explanation:

To round to the nearest hundred thousand, look at the digit in the ten-thousands place. If it is 5 or greater, round up the hundred thousands digit. If it is less than 5, keep the hundred thousands digit the same.

In 292,304, the digit in the ten-thousands place is 9 (which is 5 or greater).

So, round up the hundred thousands digit (2 becomes 3) and make all digits to the right zeros.

292,304 rounded to the nearest hundred thousand is 300,000.

Answer: 300,000

b) 420,992

Explanation:

In 420,992, the digit in the ten-thousands place is 2 (which is less than 5).

So, keep the hundred thousands digit (4 remains 4) and make all digits to the right zeros.

420,992 rounded to the nearest hundred thousand is 400,000.

Answer: 400,000

31. Find the missing number in each of the following (2 marks)

a) 3, 9, 27, _____?

Explanation:

Observe the pattern:

3 × 3 = 9

9 × 3 = 27

The rule is to multiply the previous number by 3.

So, the next number is $27 \times 3 = 81$.

Answer: 81

b) 19, 25, _____, 37

Explanation:

Observe the pattern:

19 + 6 = 25

If the rule is to add 6, then 25 + 6 = 31.

Check if 31 + 6 = 37. Yes, it is.

The rule is to add 6 to the previous number.

Answer: 31

32. Express 6/7 into 3 decimal places (2 marks)

Explanation:

To express 6/7 as a decimal, divide 6 by 7: 6 \div 7 \approx 0.85714...

To round to 3 decimal places, look at the fourth decimal place. If it is 5 or greater, round up the third decimal place. If it is less than 5, keep the third decimal place as it is.

The fourth decimal place is 1, which is less than 5. So, we keep the third decimal place (7) as it is.

0.85714... rounded to 3 decimal places is 0.857.

Answer: 0.857

33. The area of a square is 625 cm². What is the perimeter? (3 marks)

Explanation:

Find the length of one side of the square:

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Area of a square = side \times side = side<sup>2</sup>
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Given Area = 625 cm²

side = $\sqrt{625}$ cm² = 25 cm.

Find the perimeter of the square:

Perimeter of a square = $4 \times side$

Perimeter = 4×25 cm = 100 cm.

Answer: 100 cm

34. A third of the people in a church one Sunday were men. ¼ of the remaining were children. If there were 240 people in church that Sunday, how many women were there? (2 marks)

Explanation:

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Number of men:
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Men = $(1/3) \times 240 = 80$ people.

Remaining people after men:

Remaining = 240 - 80 = 160 people.

Number of children:

Children = $(1/4) \times 160 = 40$ people.

Total men and children:

Men + Children = 80 + 40 = 120 people.

Number of women:

Women = Total people - (Men + Children)

Women = 240 - 120 = 120 people.

Answer: 120 women

35. Express the compound inequalities into a number line 3 < x < 9 (2 marks)

Explanation:

The inequality 3 < x < 9 means that x is a number greater than 3 and less than 9.

On a number line:

- Draw a number line.

- Place open circles (or hollow circles) at 3 and 9 because the inequalities are strict (<), meaning 3 and 9 are not included.

- Draw a line segment connecting the two open circles, indicating that all numbers between 3 and 9 are part of the solution set.



36. $A^{2}+B^{2}=C^{2}$ $10^{2}+24^{2}=C^{2}$ 100+576=676 $C=\sqrt{676}$ C=26cm 37. Area= $\frac{1}{2}$ short diagonal × long diagonal

Area= $\frac{1}{2} \times 100 \text{m} \times 240 \text{m} = 12,000 \text{m}^2$

38. Area of painted part= Area of circular board – Area of inner part Area of board= ²²/7×14×14= 616cm² Area of inner part=²²/7×7×7=154cm² Area of painted part= 616-154= 462cm²
39. Volume of cylinder= cross sectional area × height Cross sectional area= ²²/7×4×4= 50.2857 50.2857× 14(height)= 704cm³
40. speed = total distance taken ÷ actual time

Actual time= total time – stoppage time

12 hours- 2 hours= 10 hours

Speed = 648km ÷ 10 hours= 64.8km/ hr

Average speed= total distance ÷ total time taken

648km ÷ 12 hours = 54km/hr

41. Initial temperature – drop in temperature

6°k – 15°= -9°k

New temperature= -9°k

42. Total deposit made= 250.75 + 260.50 + 200 = 860.75Change received= Money given – money deposited 1000 - 860.25 = 139.2543. $180^{\circ} - 100^{\circ} = 80^{\circ}$ Ans = 80° 44. 3(x+4)+2(5-x)Open brackets 3x+12+10-2x 3x-2x+12+10 X+2245. Length of rectangle= width ×2 Length= $4 \times 2 = 8 \text{ cm}$ Area= length × width Area= $8 \times 4 = 32 \text{ cm}^2$ 46. Square root of 225

Start dividing by prime numbers divisible by 225

225÷3= 75

75÷ 3= 25

25÷ 5= 5

Square root= 3× 5=15

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47. A)Product of 5/8 and 4/5
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 $\frac{5}{8} \times \frac{4}{5}$ Numerator=5×4=20

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Denominator=8 \times 5 = 40
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20 \div 40 = \frac{1}{2}
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48. $\frac{3}{4}$ into decimals

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3 \div 4 = 0.75
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49. Volume= cross sectional area \times height

Cross sectional area = $\frac{1}{2} \times b \times h$

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\frac{1}{2} \times 14 \times 5 = 35m^2
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Volume= 35m^2 \times 20m = 700m^3
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50.20+4/10+9/100

LCM= 100 20+4+9=69 Ans= 69/100

51. The table below shows the number of fruits sold by a vendor in one day:

Fruit	Number Sold
Mangoes	30
Oranges	45
Bananas	25
Apples	20
Pineapples	10

a) Which fruit was sold the most? (1 mark)

Explanation:

Look for the highest number in the "Number Sold" column.

Mangoes: 30

Oranges: 45

Bananas: 25

Apples: 20

Pineapples: 10

The highest number is 45, corresponding to Oranges.

Answer: Oranges

b) How many fruits were sold altogether? (1 mark)

Explanation:

Add all the numbers in the "Number Sold" column:

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Total fruits sold = 30 (Mangoes) + 45 (Oranges) + 25 (Bananas) + 20 (Apples) + 10 (Pineapples)
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Total fruits sold = 130 fruits.

Answer: 130 fruits

c) How many more oranges were sold than apples? (1 mark)

Explanation:

Number of oranges sold = 45

Number of apples sold = 20

Difference = Number of oranges - Number of apples

Difference = 45 - 20 = 25.

Answer: 25 more oranges

d) Draw a bar graph using this data, which fruit will have the shortest bar? (3 marks)

Explanation:

To draw a bar graph:

- X-axis (Horizontal): Label with the types of fruits.

- Y-axis (Vertical): Label with "Number Sold" and choose an appropriate scale (e.g., increments of 5 or 10).

- Draw bars for each fruit, with the height of the bar corresponding to the number sold. Ensure the bars are of equal width and are separated by equal gaps.

The fruit with the shortest bar will be the one with the least number sold. From the table, Pineapples were sold the least (10).

Answer: Pineapples (will have the shortest bar)



Types of Fruits

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