Math- S7

2021

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Answer Key (with Simple Explanations)

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1. Five pupils each wrote a number on the board. Which is the smallest?

- **Options (converted to decimals):**
  A. 0.457
  B. 2/3 ≈ 0.6667
  C. 40% = 0.40
  D. 0.53
  E. 0.80
- **Comparison:**
  - 0.40 (40%) is smaller than 0.457, 0.53, 0.80, and 0.6667.

Answer: C. 40%

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2. Which drink is preferred by most pupils?

The table shows Roman numerals for each drink's number of pupils:

- **Fanta:** XCI = 91
- **Pepsi:** XC = 90
- **Tea:** CIX = 109
- **Water:** CVI = 106
- **Milk:** CX = 110
- **Largest number:** CX = 110 (Milk).

Answer: E. Milk

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3. Place value of the underlined digit in 504251

(Assuming the underlined digit is "4.")

- The digits from right to left are:
  - 1 → ones
  - 5 → tens
  - 2 → hundreds
  - **4 → thousands**
  - 0 → ten thousands

- 5 → hundred thousands

Answer: B. thousands

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4. A gas jar holds 10 litres. If 1.5 litres have been used, what fraction remains?

- Total capacity: 10 L
- Used: 1.5 L
- Remaining: 10 − 1.5 = 8.5 L
- Fraction of total: 8.5 ÷ 10 = 8.5/10 = 85/100 = 17/20

Answer: C. 17/20

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5. In Uhuru Primary, 60 pupils attended class and 20 did not. What percent did not attend?

- Total pupils: 60 + 20 = 80
- Did not attend: 20
- Fraction = 20/80 = 1/4
- As a percent = 1/4 = 25%

Answer: C. 25%

Answer Key (with short explanations)

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6. A certain village had a total of 3,845,308 cattle. What is that number rounded to the nearest ten thousands?

- To round 3,845,308 to the nearest ten thousands, look at the thousands digit (5). Since it is ≥ 5, we round the ten-thousands digit (4) up by 1.
- **Rounded number:** 3,850,000

Answer: D. 3,850,000

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7. Tanganyika got independence in 1961. If Mwanakwetu was two years old then, how old was she in 2020? (Give the answer in Roman numerals.)

- Born in 1959 (1961 − 2). In 2020, age = 2020 − 1959 = 61.
- **Roman numeral for 61:** LXI

Answer: B. LXI

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8. Maneno was given the numbers 21, 29, 37, 48, 49, 51, 53, 57, 59, and 61 to identify the prime numbers. Which set is correct?

- Prime numbers from the list are: 29, 37, 53, 59, 61.

Answer: C. 29, 37, 53, 59 and 61

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9. The ages of four children were arranged in consecutive "steps": 13, 18, 23, and ____. What is the age of the fourth child?

- The pattern goes +5 each time: 13 → 18 → 23 → (23+5) = 28.

Answer: A. 28

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10. The revenue for five consecutive years was listed using the numbers 2, 4, 7, 12, 17. What is the number for the sixth year in that sequence?

- Observing the pattern of differences (2, 3, 5, 5, …) often leads to the next difference being 3, giving 17 + 3 = 20.

Answer: C. 20

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11. A sequence of pupil weights is: 59, 55, 51, ____, 43, 39, 35. What is the missing weight?

- Each step goes down by 4:
  59 → 55 (−4)
  55 → 51 (−4)
  51 → 47 (−4)
  47 → 43 (−4) etc.

Answer: B. 47

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12. The Standard One pupils' attendance at Mtakuja Primary School across five consecutive days is: 72, 75, (?), 68, 66. How many pupils attended on the fifth day?

- Directly from the list, Day 5 has **66** pupils.

Answer: D. 66 (if that matches the option labeled "66")

Answer Key (with Short Explanations)

13.

A total of sh 325,500 was collected; each villager contributed sh 500.
325,500÷500=651
Answer: D. 651

14.

Tanganyika: MCMLXI = 1961
Zimbabwe: MCMLXXX = 1980
Years between = 1980 − 1961 = 19 → XIX
Answer: B. XIX

15.

(This involves adding two abacuses. From the diagram, the sum is most likely **280,271**.)
Answer: B. 280,271

16.

John's total profit = sh 600,000.

- Profit per chicken = sh 1,500
- Profit per tray of eggs = sh 1,000
- Chickens sold = 300 → Chicken profit = 300 × 1,500 = sh 450,000

- Remaining profit = 600,000 − 450,000 = sh 150,000
- Trays of eggs = 150,000 ÷ 1,000 = 150
  Answer: D. 150

17.

Ashura has 43 mangoes, Asha has 17.
They want the same amount, so let xxx = how many Asha takes from Ashura:

$43-x=17+x \Rightarrow 26=2x \Rightarrow x=13$

Answer: B. 13

18.

Jerry has 208 workers, each paid sh 55,460 per day.
Total pay = 55,460 × 208 = sh 11,535,680
Answer: E. 11,535,680

19.

Difference between 998,999 and 819,937:
998,999 − 819,937 = 179,062
Answer: C. 179,062

20.

In Grade 7, there are 480 pupils. If 7/12 are girls:

- Girls = $(7/12)\times480=280$
- Boys = 480 − 280 = 200
- Difference = 280 − 200 = 80
  Answer: D. 80

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21. Mr Majuto has sh 3,600,000 for Juma, Ally, Rehema:

- Juma = (⅕)×3,600,000 = 720,000
- Ally = (4/9)×3,600,000 = 1,600,000
- Rehema = remaining = 3,600,000 − (720,000 + 1,600,000) = 1,280,000
  Highest = sh 1,600,000
  Answer: D. 1,600,000

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22. Mr Mahenge has 1,560 cattle.

- 35% are calves, 10% are bulls, the rest are cows → 55% cows
- Cows = 55% of 1,560 = 0.55 × 1,560 = 858
  Answer: A. 858

23.

Farida had sh 550,000. She bought:

- TV: 162,000
- Camera: 45,700
- Couches: 87,900
- Ring: 68,500
- 3 pairs of shoes @ 20,000 each = 60,000

Total spent = 162,000 + 45,700 + 87,900 + 68,500 + 60,000 = 424,100
Money left = 550,000 − 424,100 = 125,900
Answer: E. 125,900

24.

A baby slept at 7:40 a.m. for 7 hours. Wakes up at 2:40 p.m.
Answer: A. 2:40 p.m.

25.

They started playing football at 9:45 a.m. in 24-hour format → 09:45 hours.
Answer: C. 0945 hours

26.

Lusajo stayed 840 hours. Each day is 24 hours → 840 ÷ 24 = 35 days.
Answer: E. 35

27.

Yusufu arrived at 8:30 a.m. but was 30 minutes late. He should have arrived at 8:00 a.m.
Answer: D. 8:00 a.m.

28.

John (sh 30,000), Anna (sh 60,000), Suzan (sh 90,000). Each gives 1/3 to the hospital.

- John's donation = 10,000
- Anna's donation = 20,000
- Suzan's donation = 30,000
  Total = 60,000
  Answer: A. sh 60,000

29.

The drawn figure has 4 lines of symmetry.
Answer: C. 4

30.

Volume of a cube well = $64\,\mathrm{m}^3$.

Side length = $\sqrt[3]{64} = 4\,\mathrm{m}$.

Answer: B. 4 m

31.

Tyre diameter = $100\,\mathrm{cm} \rightarrow$ Circumference = $\pi \times 100 \approx 314\,\mathrm{cm} = 3.14\,\mathrm{m}$

Distance = $471\,\mathrm{m} \rightarrow$ Rounds = $471 \div 3.14 \approx 150$.

Answer: D. 150

32.

Angle EFG is more than 90° but less than 180° → **Obtuse angle**.
Answer: B. Obtuse angle

33.

Kilimanjaro height = 5,895 m. Mwanjaa reached 3,955 m.
Remaining = 5,895 − 3,955 = 1,940
Answer: A. 1,940

34.

200.25 litres in 267 bottles → Each bottle: 200.25÷267=0.75 litres = 750 ml.
Answer: D. 750 millilitres

35.

Mpanda travels 72 km in 15 minutes →

- Convert 72 km = 72,000 m
- Convert 15 min = 900 seconds
- Speed = 72,000 ÷ 900 = 80 m/s
  Answer: A. 80

36.

We have five masses:

- 0.5 dg = 50 mg
- 230 cg = 2,300 mg
- 2.4 g = 2,400 mg
- 3,000 mg (already in mg)
- 0.39 dag = 3,900 mg

A correct largest-to-smallest order is:
0.39 dag (3,900 mg), 3,000 mg, 2.4 g (2,400 mg), 230 cg (2,300 mg), 0.5 dg (50 mg).
This matches **Option D**.

37.

"Think of a number. Subtract 9. The result equals ¼ of the original number."

Let x be the number.

$$x - 9 = \tfrac{1}{4}x \quad \Longrightarrow \quad x - \tfrac{1}{4}x = 9 \quad \Longrightarrow \quad \tfrac{3}{4}x = 9 \quad \Longrightarrow \quad x = 12.$$

Answer: 12

38.

Simplify $2(3m - 2n + 5m)$.

Inside the parentheses: $3m + 5m = 8m$. So we have $2(8m - 2n)$

$$= 2 \times 8m - 2 \times 2n = 16m - 4n.$$

Answer: 16m - 4n

39.

Mr. Sawe's crop sales in decimals/fractions:

- Cashew nuts: 0.3
- Rice: $\frac{2}{5} = 0.4$
- Maize: 0.1
- Millet: unknown

Total so far: $0.3 + 0.4 + 0.1 = 0.8$.
Millet = $1 - 0.8 = 0.2$.

To find its sector in a pie chart (360° total):
$0.2 \times 360° = 72°$.
Answer: 72°

40.

Four children shared some money:

- 1st child: 4x
- 2nd child: 2x
- 3rd child: 3x
- 4th child: x

We know the 3rd child got sh 28,800, so $3x = 28,800 \Rightarrow x = 9,600$.
Total = $4x + 2x + 3x + x = 10x = 10 \times 9,600 = 96,000$.
Answer: sh 96,000

Section B (Questions 41–45)

41.

Odd perfect squares between 0 and 50:
Squares up to 50 are $1, 4, 9, 16, 25, 36, 49$. The odd ones are $1, 9, 25, 49$.
Answer: 1, 9, 25, 49

42.

A right angle (90°) is split into three angles: $(3y + 10°)$, $(4y + 20°)$, and $(40° - 2y)$. Their sum is 90°:

$$(3y + 10) + (4y + 20) + (40 - 2y) = 90.$$

Combine like terms:
$3y + 4y - 2y = 5y$ and $10 + 20 + 40 = 70$.
So $5y + 70 = 90 \Rightarrow 5y = 20 \Rightarrow y = 4$.
Answer: 4

43.

Volume of the box with length = 26 cm, width = 9 cm, height = 12 cm:

$$\text{Volume} = 26 \times 9 \times 12 = 2{,}808 \text{ cm}^3.$$

Answer: 2,808 cm³

44.

Mr. Kazimoto, wife, and 8 children (10 people total) paid sh 48,000 in bus fares.

- Each child pays half an adult's fare.
- Let adult fare = A. Then each child's fare = $\frac{A}{2}$.
- Total: $2A + 8 \times \frac{A}{2} = 2A + 4A = 6A = 48{,}000$.
- So $A = 8{,}000$. Each child = sh 4,000.
  Answer: 4,000 (fare for one child)

45.

School fee for one pupil: sh 44,665.35.
For 32 pupils:

$$32 \times 44{,}665.35 = 1{,}429{,}291.20.$$

Answer: sh 1,429,291.20