ML Official T1 – 25 Questions (Reformatted Output)

Source: ML-Official-T1-Math-01.md. Images are referenced by URL where present.

@title Q1: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question If $n+5=5$, what is the value of $n$ ?

@instruction Choose the correct option.

@difficulty easy

@Order 1

@option 0

@option $\frac{1}{5}$

@option 1

@option 5

@option 10

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Algebra

@topic Quadratic Equations & Functions (Finding roots/solutions, graphing)

@plusmarks 1

@title Q2: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question ![](https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-01.jpg?height=139&width=700&top\_left\_y=760&top\_left\_x=265)  
  
The sequence of shapes above repeats indefinitely as shown. Which shape is the 12th shape in the sequence?  
  
[Image: https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-01.jpg?height=139&width=700&top\_left\_y=760&top\_left\_x=265]  
[Image: https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-01.jpg?height=134&width=137&top\_left\_y=1088&top\_left\_x=327]  
[Image: https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-01.jpg?height=131&width=142&top\_left\_y=1238&top\_left\_x=327]  
[Image: https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-01.jpg?height=129&width=142&top\_left\_y=1391&top\_left\_x=330]  
[Image: https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-01.jpg?height=128&width=128&top\_left\_y=1557&top\_left\_x=332]  
[Image: https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-01.jpg?height=129&width=123&top\_left\_y=1708&top\_left\_x=329]

@instruction Choose the correct option.

@difficulty moderate

@Order 2

@option ![](https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-01.jpg?height=134&width=137&top\_left\_y=1088&top\_left\_x=327)

@option ![](https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-01.jpg?height=131&width=142&top\_left\_y=1238&top\_left\_x=327)

@option ![](https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-01.jpg?height=129&width=142&top\_left\_y=1391&top\_left\_x=330)

@option ![](https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-01.jpg?height=128&width=128&top\_left\_y=1557&top\_left\_x=332)

@option ![](https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-01.jpg?height=129&width=123&top\_left\_y=1708&top\_left\_x=329)

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Data Analysis & Probability

@topic Counting & Arrangement Problems

@plusmarks 1

@title Q3: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question There were 20 illustrations in Julio's sketch pad. While at a museum, he drew $x$ more illustrations in the sketch pad. Which expression represents the total number of illustrations in Julio's sketch pad after his museum visit?

@instruction Choose the correct option.

@difficulty moderate

@Order 3

@option $\frac{x}{20}$

@option $\frac{20}{x}$

@option $20 x$

@option $20-x$

@option $20+x$

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Algebra

@topic Quadratic Equations & Functions (Finding roots/solutions, graphing)

@plusmarks 1

@title Q4: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question $4, \square 86$  
  
The in the number above represents a digit from 0 through 9 . If the number is less than 4,486 , what is the greatest possible value for $\square$ ?

@instruction Choose the correct option.

@difficulty moderate

@Order 4

@option 0

@option 3

@option 4

@option 7

@option 9

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Geometry and Measurement

@topic Area & Volume

@plusmarks 1

@title Q5: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question Which of the following is the sum of $\frac{3}{8}$ and $\frac{4}{7}$ ?

@instruction Choose the correct option.

@difficulty easy

@Order 5

@option $\frac{1}{8}$

@option $\frac{3}{14}$

@option $\frac{7}{15}$

@option $\frac{33}{56}$

@option $\frac{53}{56}$

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Problem Solving

@topic Problem Solving

@plusmarks 1

@title Q6: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question Ilona goes on a 4-hour hike from her campsite to a scenic lookout. The graph shows her altitude during the hike and the time it took her to reach each corresponding altitude. Based on the graph, the altitude of the scenic lookout is how many meters above the altitude of the campsite?  
  
## Ilona's Altitude During a Hike  
  
![](https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-02.jpg?height=453&width=665&top\_left\_y=847&top\_left\_x=264)  
  
[Image: https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-02.jpg?height=453&width=665&top\_left\_y=847&top\_left\_x=264]

@instruction Choose the correct option.

@difficulty moderate

@Order 6

@option 100

@option 200

@option 300

@option 400

@option 500

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Data Analysis & Probability

@topic Interpretation of Tables & Graphs

@plusmarks 1

@title Q7: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question What is the value of $0.5 \times 23.5 \times 0.2$ ?

@instruction Choose the correct option.

@difficulty easy

@Order 7

@option 0.0235

@option 0.235

@option 2.35

@option 23.5

@option 235

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Problem Solving

@topic Problem Solving

@plusmarks 1

@title Q8: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question On a table, there are ten of each of the following types of coins: 1-cent, 5-cent, 10 -cent, and 25 -cent coins. If Edith needs exactly 36 cents, what is the least number of coins she must take from the table?

@instruction Choose the correct option.

@difficulty moderate

@Order 8

@option Two

@option Three

@option Four

@option Five

@option Six

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Data Analysis & Probability

@topic Interpretation of Tables & Graphs

@plusmarks 1

@title Q9: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question What is the value of $\frac{1}{2}\left(\frac{3}{4} \times \frac{1}{3}\right)$ ?

@instruction Choose the correct option.

@difficulty easy

@Order 9

@option $\frac{1}{8}$

@option $\frac{5}{24}$

@option $\frac{2}{9}$

@option $\frac{13}{24}$

@option $\frac{19}{12}$

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Problem Solving

@topic Problem Solving

@plusmarks 1

@title Q10: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question 10.  
![](https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-02.jpg?height=80&width=665&top\_left\_y=1489&top\_left\_x=1240)  
  
In the figure above, segment $\overline{S T}$ has length 12, $T$ is the midpoint of the segment $\overline{R V}$, and $S$ is the midpoint of segment $\overline{R T}$. What is the length of the segment $\overline{S V}$ ?  
  
[Image: https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-02.jpg?height=80&width=665&top\_left\_y=1489&top\_left\_x=1240]

@instruction Choose the correct option.

@difficulty moderate

@Order 10

@option 12

@option 18

@option 24

@option 36

@option 48

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Geometry and Measurement

@topic Parallel & Perpendicular Lines

@plusmarks 1

@title Q11: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question Let $a$ be defined by $a=a^{2}+1$, where $a$ is a whole number. What is the value of 3 ?

@instruction Choose the correct option.

@difficulty easy

@Order 11

@option 16

@option 10

@option 8

@option 7

@option 6

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Problem Solving

@topic Problem Solving

@plusmarks 1

@title Q12: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question Each student at Central Middle School wears a uniform consisting of 1 shirt and 1 pair of pants. The table shows the colors available for each item of clothing. How many different uniforms are possible?  
  
## Uniform Choices  
  
| Shirt Color | Pants Color |  
| :---: | :---: |  
| Tan | Black |  
| Red | Khaki |  
| White | Navy |  
| Yellow | |

@instruction Choose the correct option.

@difficulty moderate

@Order 12

@option Three

@option Four

@option Seven

@option Ten

@option Twelve

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Data Analysis & Probability

@topic Interpretation of Tables & Graphs

@plusmarks 1

@title Q13: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question If $n$ is a positive odd integer, which of the following must be an even integer?

@instruction Choose the correct option.

@difficulty easy

@Order 13

@option $3 n-1$

@option $2 n+3$

@option $2 n-1$

@option $n+2$

@option $\frac{3 n}{2}$

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Algebra

@topic Quadratic Equations & Functions (Finding roots/solutions, graphing)

@plusmarks 1

@title Q14: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question Joseph's car began the week with a full tank of gasoline. During the week, he drove his car 232 miles and paid \$32 for gasoline that week. At this rate, how many miles will he drive if he pays $\$ 40$ for gasoline next week?

@instruction Choose the correct option.

@difficulty moderate

@Order 14

@option 240

@option 288

@option 290

@option 320

@option 332

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Geometry and Measurement

@topic Parallel & Perpendicular Lines

@plusmarks 1

@title Q15: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question Of the following fractions, which is closest to $37 \%$ ?

@instruction Choose the correct option.

@difficulty easy

@Order 15

@option $\frac{1}{3}$

@option $\frac{1}{4}$

@option $\frac{2}{5}$

@option $\frac{3}{7}$

@option $\frac{3}{8}$

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Numbers and Operations

@topic Fractions, Decimals, & Percents

@plusmarks 1

@title Q16: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question At Banham School, there are 20 students in each class, and 5 classes wish to form 3 clubs. Each of the students must belong to only one club and the membership of each club may not outnumber the membership of the other clubs by more than one student. What is the least possible number of students in one club?

@instruction Choose the correct option.

@difficulty moderate

@Order 16

@option 15

@option 20

@option 21

@option 33

@option 34

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Problem Solving

@topic Problem Solving

@plusmarks 1

@title Q17: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question 17.  
![](https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-04.jpg?height=264&width=389&top\_left\_y=1099&top\_left\_x=266)  
  
The rectangle shown is divided into 6 congruent squares. What fraction of the rectangle is shaded?  
  
[Image: https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-04.jpg?height=264&width=389&top\_left\_y=1099&top\_left\_x=266]

@instruction Choose the correct option.

@difficulty moderate

@Order 17

@option $\frac{3}{8}$

@option $\frac{5}{8}$

@option $\frac{5}{9}$

@option $\frac{7}{12}$

@option $\frac{2}{3}$

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Numbers and Operations

@topic Fractions, Decimals, & Percents

@plusmarks 1

@title Q18: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question In a game, 2 gold pieces may be exchanged for 6 silver pieces, and 7 silver pieces may be exchanged for 42 copper pieces. At this rate, how many copper pieces may be exchanged for 5 gold pieces?

@instruction Choose the correct option.

@difficulty moderate

@Order 18

@option 10

@option 18

@option 36

@option 72

@option 90

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Problem Solving

@topic Problem Solving

@plusmarks 1

@title Q19: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question The figure shown consists of three segments and two squares. Each square has side lengths of 2 centimeters, and $A B$ $=6$ centimeters, $\mathrm{CD}=8$ centimeters, and $\mathrm{EF}=10$ centimeters. Based on the figure, what is the length of $n$, in centimeters?  
![](https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-04.jpg?height=275&width=673&top\_left\_y=1380&top\_left\_x=1241)  
  
[Image: https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-04.jpg?height=275&width=673&top\_left\_y=1380&top\_left\_x=1241]

@instruction Choose the correct option.

@difficulty moderate

@Order 19

@option 18

@option 20

@option 22

@option 24

@option 26

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Algebra

@topic Quadratic Equations & Functions (Finding roots/solutions, graphing)

@plusmarks 1

@title Q20: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question Calculate: $3+6 \times 2^{3} \div 3+3^{2}$

@instruction Choose the correct option.

@difficulty easy

@Order 20

@option 21

@option 24

@option 27

@option 28

@option 33

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Problem Solving

@topic Problem Solving

@plusmarks 1

@title Q21: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question 21.  
![](https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-05.jpg?height=277&width=275&top\_left\_y=290&top\_left\_x=1256)  
  
A square card that is blank on both sides is punched with 2 small holes. The top face of the card is shown in the figure. If the card is turned face down, which of the following orientations of the card is NOT possible?  
  
[Image: https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-05.jpg?height=277&width=275&top\_left\_y=290&top\_left\_x=1256]  
[Image: https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-05.jpg?height=291&width=288&top\_left\_y=884&top\_left\_x=1309]  
[Image: https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-05.jpg?height=278&width=278&top\_left\_y=1200&top\_left\_x=1314]  
[Image: https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-05.jpg?height=275&width=275&top\_left\_y=1505&top\_left\_x=1315]  
[Image: https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-05.jpg?height=269&width=269&top\_left\_y=1809&top\_left\_x=1318]  
[Image: https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-05.jpg?height=264&width=264&top\_left\_y=2118&top\_left\_x=1321]

@instruction Choose the correct option.

@difficulty moderate

@Order 21

@option ![](https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-05.jpg?height=291&width=288&top\_left\_y=884&top\_left\_x=1309)

@option ![](https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-05.jpg?height=278&width=278&top\_left\_y=1200&top\_left\_x=1314)

@option ![](https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-05.jpg?height=275&width=275&top\_left\_y=1505&top\_left\_x=1315)

@option ![](https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-05.jpg?height=269&width=269&top\_left\_y=1809&top\_left\_x=1318)

@option ![](https://cdn.mathpix.com/cropped/2025\_07\_31\_dc2e3d22c70b1617b86dg-05.jpg?height=264&width=264&top\_left\_y=2118&top\_left\_x=1321)

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Geometry and Measurement

@topic Area & Volume

@plusmarks 1

@title Q22: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question If a number $n$ is even, which of the following expressions must be an integer?

@instruction Choose the correct option.

@difficulty easy

@Order 22

@option $\frac{3 n}{2}$

@option $\frac{3 n}{4}$

@option $\frac{n+4}{4}$

@option $\frac{n+2}{3}$

@option $\frac{3(n+1)}{2}$

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Algebra

@topic Quadratic Equations & Functions (Finding roots/solutions, graphing)

@plusmarks 1

@title Q23: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question On Monday, Aidan reads $\frac{1}{3}$ of a book, and on Tuesday, Aidan reads $\frac{1}{4}$ of the remaining pages. To finish the book, he must read an additional 60 pages. How many pages are in the book?

@instruction Choose the correct option.

@difficulty moderate

@Order 23

@option 720

@option 360

@option 144

@option 120

@option 72

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Problem Solving

@topic Problem Solving

@plusmarks 1

@title Q24: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question A square piece of paper has an area of 144 square inches. What is the circumference, in inches, of the largest circle that can be cut from the paper?

@instruction Choose the correct option.

@difficulty moderate

@Order 24

@option $12 \pi$

@option $24 \pi$

@option $36 \pi$

@option $72 \pi$

@option $144 \pi$

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Geometry and Measurement

@topic Circles (Area, circumference)

@plusmarks 1

@title Q25: Auto Reformatted

@description Reformatted from provided dataset; images preserved via URL where applicable.

@question The number 120 is increased by $50 \%$, and the result is then decreased by $30 \%$ to give the number $x$. What is the value of $x$ ?

@instruction Choose the correct option.

@difficulty moderate

@Order 25

@option 174

@option 162

@option 144

@option 136

@option 126

@explanation

Explanation not included in the source; can be added if answer keys are provided.

@subject Quantitative Math

@unit Algebra

@topic Quadratic Equations & Functions (Finding roots/solutions, graphing)

@plusmarks 1