

SMETA MATHEMATICS OLYMPIAD

Question Paper — Grade 5-6

Total Questions: 25 · Time: 60 minutes · Max Marks: 100

Instructions:

Read each question carefully. Each question has four options (A, B, C, D). Choose only one correct answer. Use a pencil or a blue/black pen. No calculators are allowed. All the best!

Question 1

In the number 6,924 what is the value of the digit 4?

- A) 4
- B) 40
- C) 400
- D) 4000

Question 2

Larissa had 2,350 stickers in her collection. She gave away 875 stickers to her classmates. How many stickers does she have left?

- A) 1,375
- B) 1,475
- C) 1,575
- D) 1,675

Question 3

Pedro buys 8 boxes of pencils for his classroom. Each box contains 24 pencils. How many pencils does he buy in total?

- A) 172
- B) 182
- C) 192
- D) 202

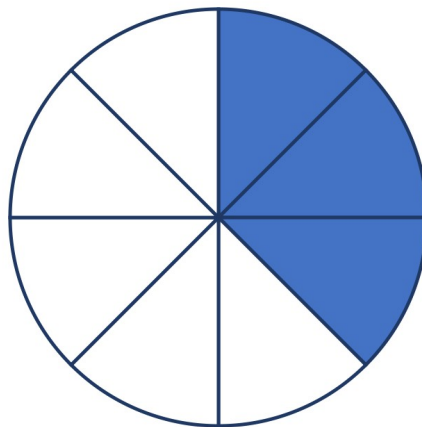
Question 4

Which of the following decimals is the greatest?

- A) 0.405
- B) 0.45
- C) 0.49
- D) 0.5

Question 5

The circle below is divided into 8 equal parts. What fraction of the circle is shaded?



- A) $\frac{3}{8}$
- B) $\frac{5}{8}$
- C) $\frac{3}{5}$
- D) $\frac{8}{3}$

Question 6

What is $\frac{3}{4}$ written as a percentage?

- A) 25%
- B) 34%
- C) 43%
- D) 75%

Question 7

Sara has 3 whole pizzas and 2 out of 5 slices of another pizza of the same size. Each pizza is cut into 5 equal slices. Written as a single fraction over 5, how many slices of pizza does she have in total?

- A) $17/5$
- B) $19/5$
- C) $21/5$
- D) $23/5$

Question 8

Which of the following numbers is NOT a factor of 36?

- A) 5
- B) 9
- C) 12
- D) 18

Question 9

What is the prime factorization of 60?

- A) $2 \times 3 \times 5 \times 5$
- B) $2 \times 2 \times 3 \times 5$
- C) $2 \times 3 \times 3 \times 5$
- D) $2 \times 2 \times 5 \times 5$

Question 10

What is the HCF (Highest Common Factor) of 18 and 24?

- A) 3
- B) 6
- C) 9
- D) 12

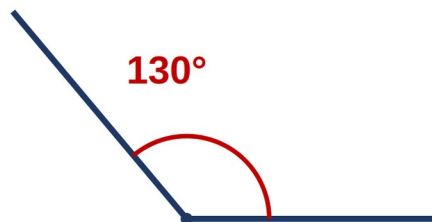
Question 11

Camila exercises every 4 days and Beatriz exercises every 6 days. If they both exercise today, after how many days will they next exercise together?

- A) 6 days
- B) 9 days
- C) 12 days
- D) 24 days

Question 12

Look at the angle shown below. What type of angle is it?



- A) Acute angle
- B) Right angle
- C) Obtuse angle
- D) Straight angle

Question 13

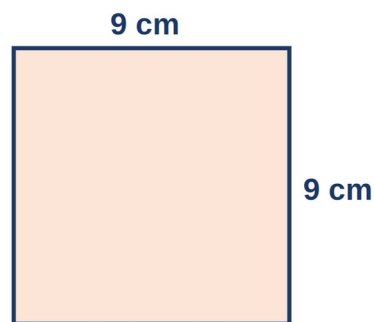
The rectangle below has a length of 12 cm and a width of 7 cm. What is its perimeter?



- A) 19 cm
- B) 38 cm
- C) 42 cm
- D) 84 cm

Question 14

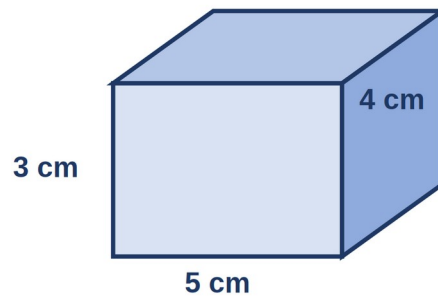
The square below has a side length of 9 cm. What is its area?



- A) 18 cm^2
- B) 36 cm^2
- C) 72 cm^2
- D) 81 cm^2

Question 15

The cuboid below has the dimensions shown. What is its volume?



- A) 12 cm^3
- B) 35 cm^3
- C) 47 cm^3
- D) 60 cm^3

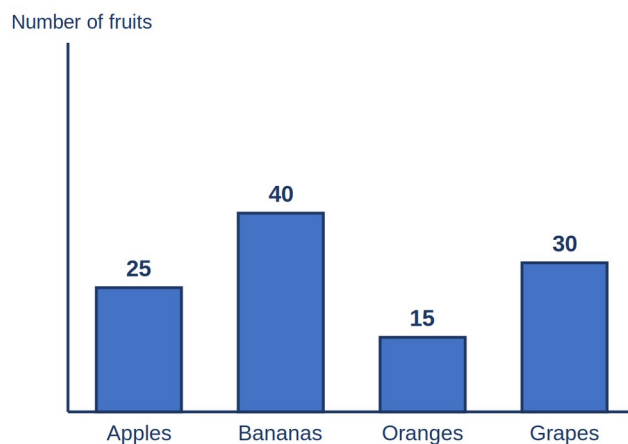
Question 16

A cube has a side length of 6 cm. What is its volume?

- A) 36 cm^3
- B) 108 cm^3
- C) 180 cm^3
- D) 216 cm^3

Question 17

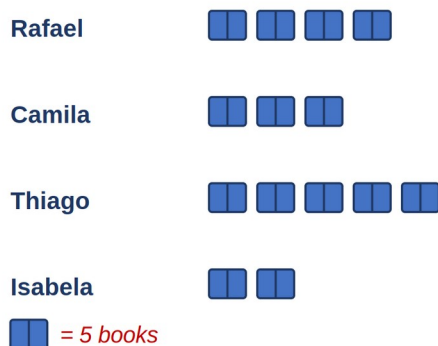
The bar graph below shows the number of fruits sold at a school stall. How many more bananas were sold than oranges?



- A) 15
- B) 20
- C) 25
- D) 30

Question 18

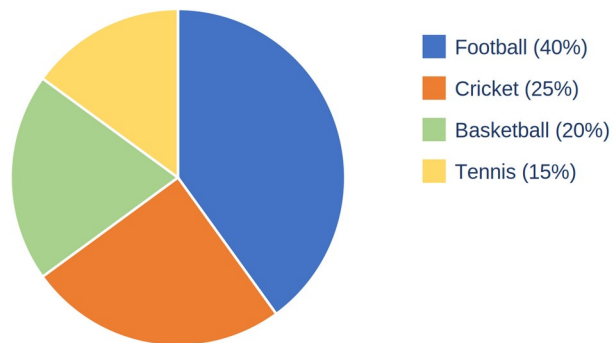
The pictograph below shows the number of books read by four students in a month. Each book icon represents 5 books. How many books did Thiago and Isabela read altogether?



- A) 25
- B) 30
- C) 35
- D) 40

Question 19

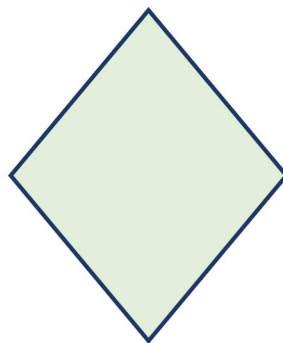
The pie chart below shows the favorite sports of 200 students at a school. How many students chose Basketball?



- A) 20
- B) 40
- C) 50
- D) 60

Question 20

How many lines of symmetry does the rhombus shown below have?



- A) 0
- B) 1
- C) 2
- D) 4

Question 21

Which capital letter has a horizontal line of symmetry but does NOT have a vertical line of symmetry?

- A) B
- B) H
- C) O
- D) X

Question 22

Look at the sequence: 3, 7, 15, 31, 63, ... What is the next number in the pattern?

- A) 95
- B) 111
- C) 119
- D) 127

Question 23

Four friends, Lucas, Gabriel, Mariana and Fernanda, are standing in a line of 4 people. Lucas is first in the line. Gabriel is not first or last. Mariana is standing right after Gabriel. Fernanda is not last. Who is standing last in the line?

- A) Mariana
- B) Gabriel
- C) Fernanda
- D) Lucas

Question 24

João has a monthly allowance of \$250. He spends 40% of it on books. He then spends $\frac{1}{4}$ of what remains on a pen. How much money does he have left?

- A) \$100.00
- B) \$112.50
- C) \$125.00
- D) \$150.00

Question 25

Sofia is making identical gift bags using 84 chocolates and 60 candies, with none left over. She wants to make the greatest possible number of bags. How many bags can she make, and how many chocolates will be in each bag?

- A) 3 bags, 28 chocolates each
- B) 4 bags, 21 chocolates each
- C) 6 bags, 14 chocolates each
- D) 12 bags, 7 chocolates each

Answer Key

SMETA Mathematics Olympiad · Grade 5-6

1. A	2. B	3. C	4. D	5. A
6. D	7. A	8. A	9. B	10. B
11. C	12. C	13. B	14. D	15. D
16. D	17. C	18. C	19. B	20. C
21. A	22. D	23. A	24. B	25. D

SMETA MATHEMATICS OLYMPIAD**Question Paper — Grade 5-6**

Total Questions: 25 · Time: 60 minutes · Max Marks: 100

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Read each question carefully. Each question has four options (A, B, C, D). Choose only one correct answer. Use a pencil or a blue/black pen. No calculators are allowed. All the best!

Question 1

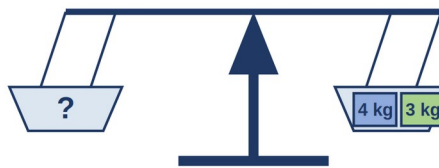
Point P is marked on the number line below. What number does point P represent?



- A) 14
- B) 15
- C) 16
- D) 17

Question 2

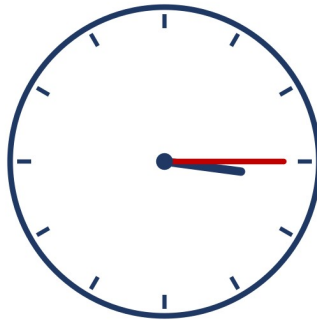
The scale below is balanced. The box on the left has an unknown weight. What is the weight of the box?



- A) 5 kg
- B) 6 kg
- C) 7 kg
- D) 8 kg

Question 3

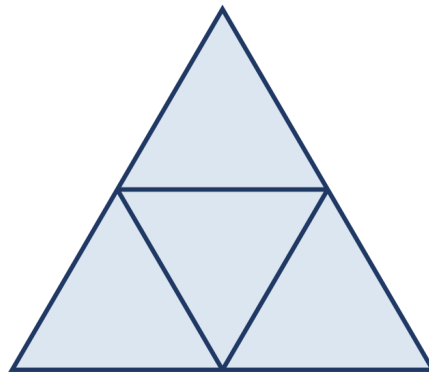
The clock below shows the time Marcos started his homework. He worked for 50 minutes without stopping. What time did he finish?



- A) 3:55
- B) 4:05
- C) 4:15
- D) 4:25

Question 4

The large triangle below is divided into smaller triangles by joining the midpoints of its sides. How many triangles are there in total, including the large triangle?



- A) 3
- B) 4
- C) 5
- D) 6

Question 5

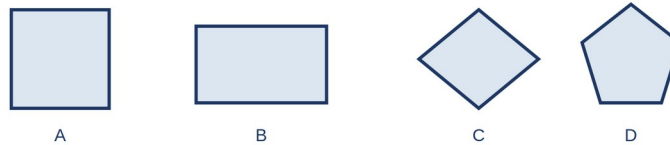
Look at the pattern of dots below. If the pattern continues in the same way, how many dots will be in the next figure?



- A) 12
- B) 13
- C) 14
- D) 15

Question 6

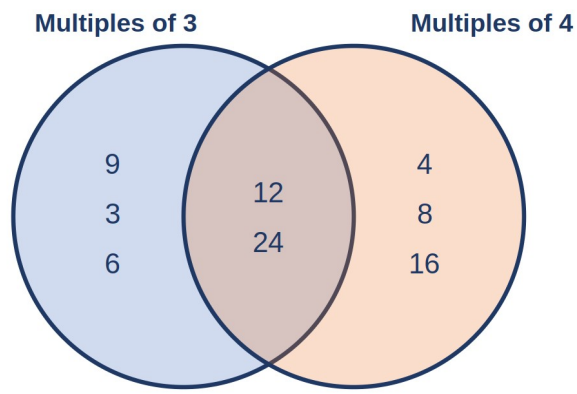
Three of the shapes below belong to the same group, but one does not belong. Which shape does not belong with the others?



- A) Shape A (square)
- B) Shape B (rectangle)
- C) Shape C (rhombus)
- D) Shape D (pentagon)

Question 7

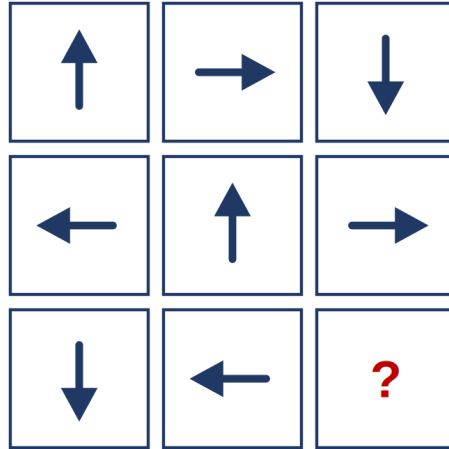
The Venn diagram below shows some numbers sorted by whether they are multiples of 3, multiples of 4, or both. How many of the numbers shown are multiples of both 3 and 4?



- A) 1
- B) 2
- C) 3
- D) 4

Question 8

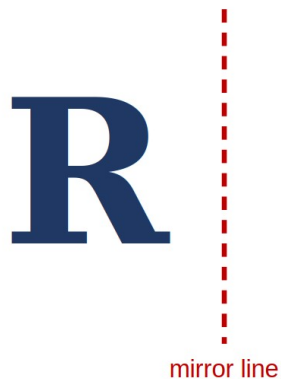
Look at the grid of arrows below. Each arrow follows a repeating pattern. Which direction should replace the question mark in the last cell?



- A) Up
- B) Right
- C) Down
- D) Left

Question 9

The letter R below is shown next to a mirror line. What would the letter look like when reflected in the mirror line?



- A) The same as the original letter
- B) The letter flipped left to right (a backwards R)
- C) The letter flipped upside down
- D) The letter flipped both left to right and upside down

Question 10

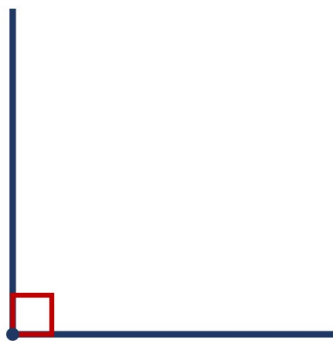
The arrow below points up. If the arrow is rotated 90 degrees clockwise, which direction will it point?



- A) Up (unchanged)
- B) Right
- C) Down
- D) Left

Question 11

The mark at the vertex of the angle below shows a special type of angle. What type of angle is shown?



- A) Acute angle
- B) Right angle
- C) Obtuse angle
- D) Straight angle

Question 12

The rectangle below has a length of 15 cm and a width of 9 cm. What is its perimeter?



- A) 48 cm
- B) 54 cm
- C) 60 cm
- D) 84 cm

Question 13

A rectangular field has a length of 24 m and a width of 15 m. What is its perimeter?

- A) 39 m
- B) 60 m
- C) 78 m
- D) 120 m

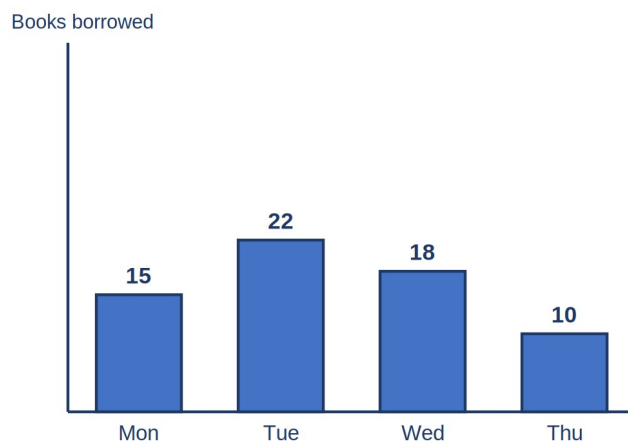
Question 14

A rectangular box has a length of 5 cm, a width of 4 cm, and a height of 3 cm. What is its volume?

- A) 60 cm^3
- B) 72 cm^3
- C) 84 cm^3
- D) 96 cm^3

Question 15

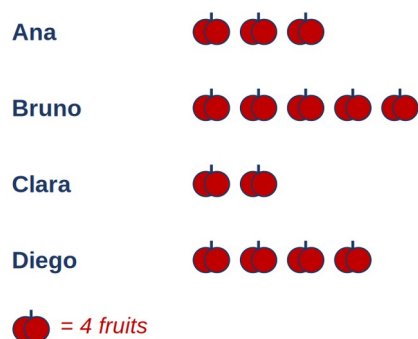
The bar graph below shows the number of books borrowed from a school library on four different days. How many more books were borrowed on Tuesday than on Thursday?



- A) 8
- B) 10
- C) 12
- D) 14

Question 16

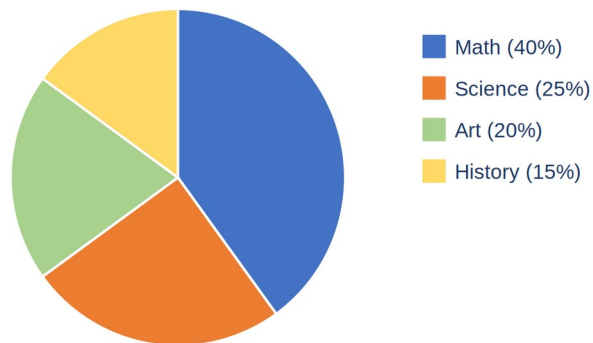
The pictograph below shows the number of fruits eaten by four children in a week. Each fruit icon represents 4 fruits. How many fruits did Bruno and Clara eat altogether?



- A) 24
- B) 26
- C) 28
- D) 30

Question 17

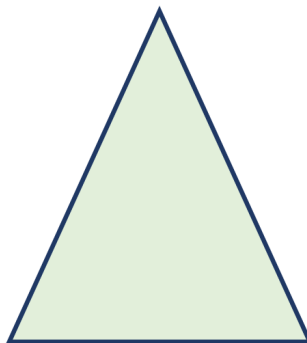
The pie chart below shows the favorite subjects of 160 students at a school. How many students chose Art?



- A) 16
- B) 24
- C) 28
- D) 32

Question 18

How many lines of symmetry does the triangle shown below have?



- A) 0
- B) 1
- C) 2
- D) 3

Question 19

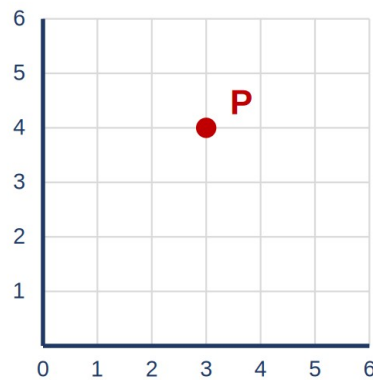
Look at the pattern of dominoes below. Each domino shows a matching pair, and the total number of pips increases in a pattern. How many pips will the next domino in the pattern have in total?



- A) 9
- B) 10
- C) 11
- D) 12

Question 20

Point P is marked on the grid below. What are the coordinates of point P, written as (across, up)?



- A) (3, 4)
- B) (3, 3)
- C) (4, 3)
- D) (4, 4)

Question 21

Which of the following numbers is a common multiple of 6 and 8?

- A) 12
- B) 16
- C) 18
- D) 24

Question 22

Beatriz and Diego are jogging laps around a track. Beatriz completes a lap every 8 minutes and Diego completes a lap every 10 minutes. If they both start together at the finish line, after how many minutes will they next be at the finish line together?

- A) 40 minutes
- B) 50 minutes
- C) 60 minutes
- D) 80 minutes

Question 23

Beatriz saved \$180. She spent $\frac{1}{3}$ of it on a book, and then spent 20% of what remained on a notebook. How much money does she have left?

- A) \$84.00
- B) \$90.00
- C) \$96.00
- D) \$102.00

Question 24

Valentina, Renata, Bianca and Amanda each play a different sport: football, volleyball, basketball or tennis. Valentina does not play football or basketball. Renata plays tennis. Bianca does not play volleyball. Amanda plays football. What sport does Valentina play?

- A) Volleyball
- B) Basketball
- C) Tennis
- D) Football

Question 25

Look at the sequence: 2, 6, 18, 54, ... What is the next number in the pattern?

- A) 90
- B) 120
- C) 144
- D) 162

Answer Key

SMETA Mathematics Olympiad · Grade 5-6

1. A	2. C	3. B	4. C	5. D
6. D	7. B	8. A	9. B	10. B
11. B	12. A	13. C	14. A	15. C
16. C	17. D	18. B	19. B	20. A
21. D	22. A	23. C	24. A	25. D

SMETA MATHEMATICS OLYMPIAD**Question Paper — Grade 5-6**

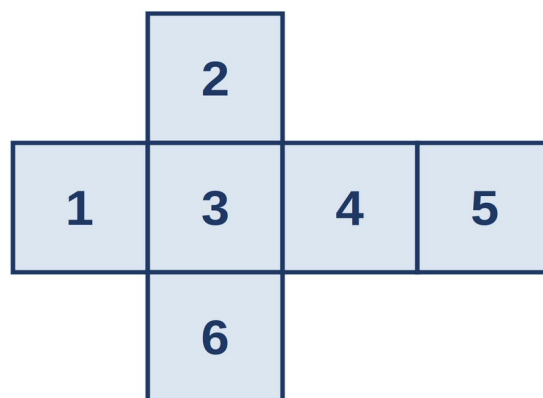
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Read each question carefully. Each question has four options (A, B, C, D). Choose only one correct answer. Use a pencil or a blue/black pen. No calculators are allowed. All the best!

Question 1

The net below can be folded to form a cube. Each face is labeled with a number. When the net is folded into a cube, which face will be directly opposite face 3?



- A) 1
- B) 2
- C) 4
- D) 5

Question 2

In the picture equations below, each shape stands for the same number wherever it appears. What is the value of the triangle?

$$\text{blue circle} + \text{blue circle} = 16$$

$$\text{blue circle} + \text{green square} = 12$$

$$\text{green square} + \text{yellow triangle} = 9$$

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

Question 3

Sofia's school has 4,285 students in total. 1,468 of them are boys. How many students are girls?

- A) 2,717
- B) 2,817
- C) 2,917
- D) 3,017

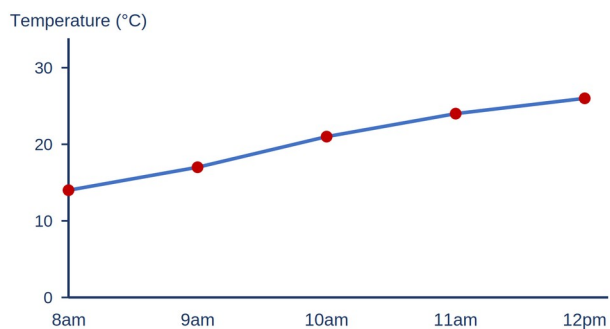
Question 4

Which of these decimals is closest to 7?

- A) 6.4
- B) 6.8
- C) 7.3
- D) 7.9

Question 5

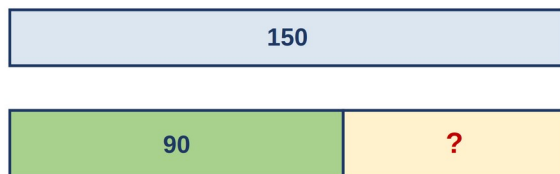
The line graph below shows the temperature recorded every hour from 8am to 12pm. What was the temperature at 10am?



- A) 21°C
- B) 24°C
- C) 26°C
- D) 28°C

Question 6

The bar model below shows a whole of 150 split into two parts. One part is 90. What is the missing part?



- A) 40
- B) 60
- C) 70
- D) 80

Question 7

What is 15% of 340?

- A) 20
- B) 34
- C) 45
- D) 51

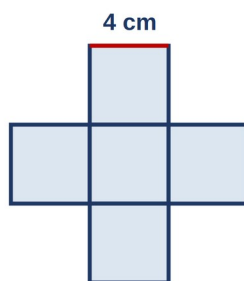
Question 8

What is the LCM (Lowest Common Multiple) of 9 and 12?

- A) 18
- B) 24
- C) 36
- D) 108

Question 9

The plus-shaped figure below is made from 5 identical squares, each with a side length of 4 cm. What is the total perimeter of the figure?



- A) 40 cm
- B) 48 cm
- C) 52 cm
- D) 60 cm

Question 10

Lucas has two ropes, one 48 m long and the other 60 m long. He wants to cut both ropes into equal pieces, as long as possible, with none left over. How long should each piece be?

- A) 6 m
- B) 12 m
- C) 18 m
- D) 24 m

Question 11

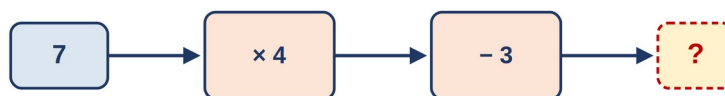
In the magic square below, every row, column and diagonal adds up to the same total. What number replaces the question mark?

8	1	6
3	5	?
4	9	2

- A) 7
- B) 8
- C) 9
- D) 11

Question 12

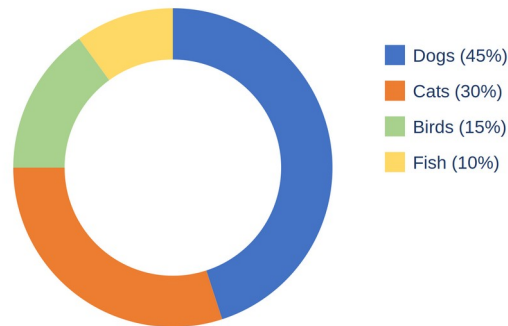
The function machine below takes a number in, multiplies it by 4, then subtracts 3. What is the output when the input is 7?



- A) 21
- B) 24
- C) 25
- D) 28

Question 13

The donut chart below shows the favorite pets of 150 students at a school. How many students chose Cats?



- A) 15
- B) 30
- C) 45
- D) 60

Question 14

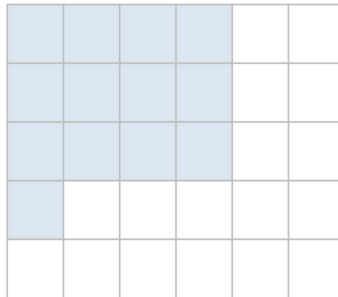
Sofia buys the notebook, pen, and eraser shown below, one of each. If she pays with a \$10 bill, how much change does she receive?

Notebook \$4.50	Pen \$1.25	Eraser \$0.75
--------------------	---------------	------------------

- A) \$3.50
- B) \$4.00
- C) \$4.50
- D) \$5.00

Question 15

The grid below has some unit squares shaded. What is the total area of the shaded shape, in square units?



- A) 10
- B) 12
- C) 13
- D) 15

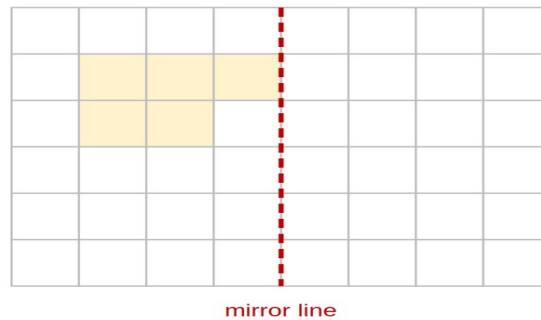
Question 16

In a triangle, one angle measures 50° and another measures 70° . What is the measure of the third angle?

- A) 60°
- B) 65°
- C) 70°
- D) 75°

Question 17

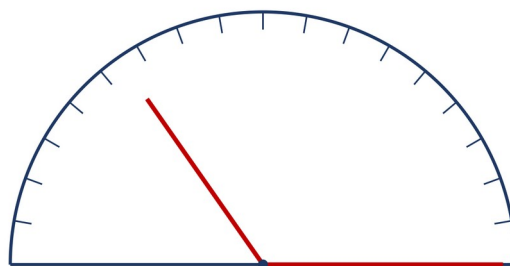
The grid below shows part of a symmetric pattern and a mirror line. How many more squares must be shaded on the right side of the mirror line so that the whole pattern is symmetrical?



- A) 3
- B) 4
- C) 5
- D) 6

Question 18

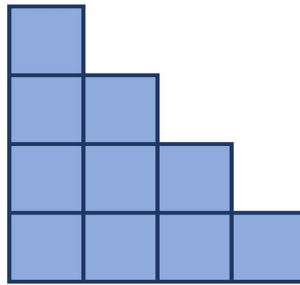
The diagram below shows an angle measured against a protractor scale. What is the measure of the angle?



- A) 45°
- B) 50°
- C) 55°
- D) 60°

Question 19

The figure below is built from stacked unit cubes, shown from the side with every cube visible. How many unit cubes make up the figure?



- A) 6
- B) 7
- C) 8
- D) 10

Question 20

Look at the sequence: 1, 4, 9, 16, 25, ... What is the next number in the pattern?

- A) 16
- B) 25
- C) 30
- D) 36

Question 21

Four friends, Sofia, Lucas, Marina and Pedro, compare how much money they have. Sofia has more than Lucas. Marina has less than Lucas. Pedro has more than Sofia. Who has the least money?

- A) Sofia
- B) Lucas
- C) Marina
- D) Pedro

Question 22

Which of these shapes has exactly 4 lines of symmetry: a square, a rectangle, a regular pentagon, or a regular hexagon?

- A) Square
- B) Rectangle
- C) Regular pentagon
- D) Regular hexagon

Question 23

A rectangular swimming pool is 25 m long and 10 m wide. A path of width 2 m surrounds the pool on all sides. What is the area of the path?

- A) 120 m^2
- B) 140 m^2
- C) 150 m^2
- D) 156 m^2

Question 24

Lucas has \$84. He spends 25% of it on a book, then spends \$15 on lunch. How much money does he have left?

- A) \$42
- B) \$48
- C) \$54
- D) \$60

Question 25

The sum of two numbers is 48 and their difference is 12. What is the larger number?

- A) 30
- B) 33
- C) 36
- D) 42

Answer Key

SMETA Mathematics Olympiad · Grade 5-6

1. D	2. A	3. B	4. B	5. A
6. B	7. D	8. C	9. B	10. B
11. A	12. C	13. D	14. A	15. C
16. A	17. C	18. C	19. D	20. D
21. C	22. A	23. D	24. B	25. A

SMETA MATHEMATICS OLYMPIAD**Question Paper — Grade 5-6**

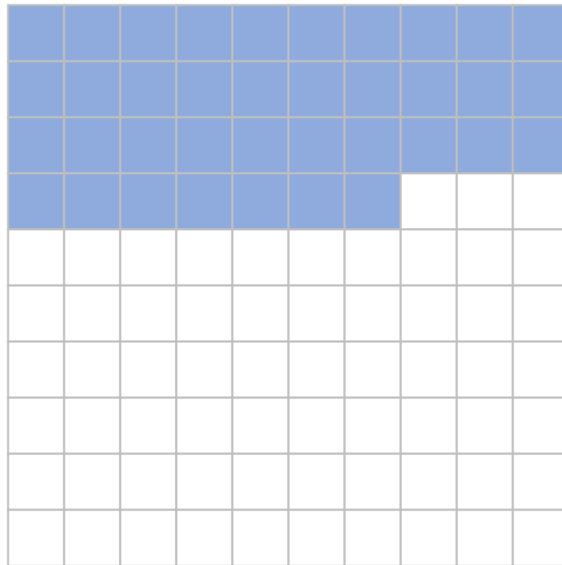
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Question 1

The grid below has 100 equal squares, and some of them are shaded. What percentage of the grid is shaded?



- A) 37%
- B) 45%
- C) 52%
- D) 60%

Question 2

What is 4,672 rounded to the nearest hundred?

- A) 4,600
- B) 4,700
- C) 4,750
- D) 4,800

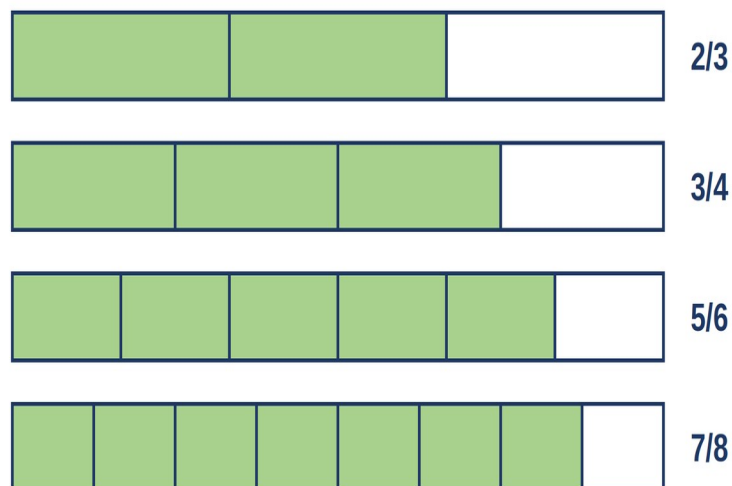
Question 3

Add: $3.45 + 2.8$

- A) 5.25
- B) 6.15
- C) 6.25
- D) 7.25

Question 4

The fraction wall below shows four fractions. Using the diagram, which fraction is the greatest?



- A) $\frac{2}{3}$
- B) $\frac{3}{4}$
- C) $\frac{5}{6}$
- D) $\frac{7}{8}$

Question 5

Which of the following numbers is NOT a multiple of 7?

- A) 14
- B) 21
- C) 28
- D) 34

Question 6

The table below shows how many books a group of students read in a month. How many students read at least 3 books?

Books read	Frequency
1 book	5
2 books	8
3 books	6
4 books	3

- A) 9
- B) 11
- C) 13
- D) 22

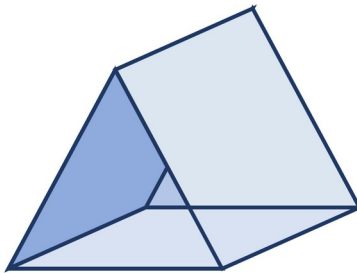
Question 7

What is $\frac{3}{5}$ written as a decimal?

- A) 0.35
- B) 0.6
- C) 0.65
- D) 0.75

Question 8

The solid below is a triangular prism. How many faces does it have in total?



- A) 3
- B) 4
- C) 5
- D) 6

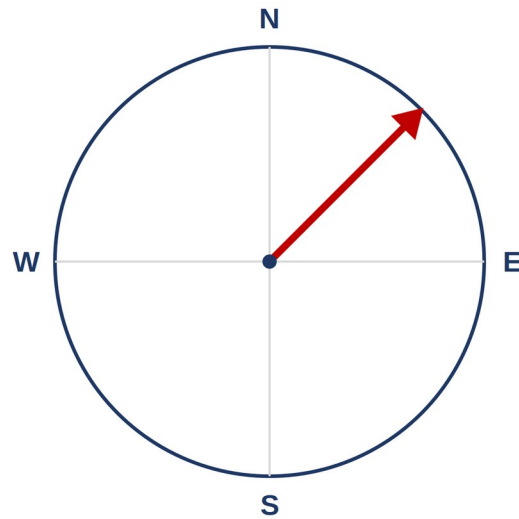
Question 9

Sofia buys 3 notebooks at \$2.25 each. How much does she spend in total?

- A) \$4.50
- B) \$5.25
- C) \$6.00
- D) \$6.75

Question 10

The compass below shows an arrow pointing in a direction. Which direction is the arrow pointing?



- A) North
- B) Northeast
- C) East
- D) Southeast

Question 11

The pattern below shows squares made from matchsticks. If the pattern continues in the same way, how many matchsticks are needed to make 6 squares in a row?



1 square (4 matches)



2 squares (7 matches)



3 squares (10 matches)

- A) 19
- B) 22
- C) 25
- D) 28

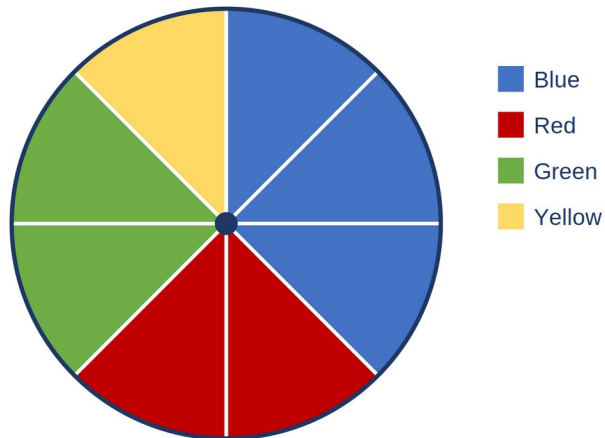
Question 12

What is the HCF (Highest Common Factor) of 36 and 54?

- A) 9
- B) 18
- C) 27
- D) 36

Question 13

The spinner below is divided into 8 equal sections of different colors. If Lucas spins it once, what is the probability that it lands on blue, written as a fraction?



- A) $\frac{1}{8}$
- B) $\frac{2}{8}$
- C) $\frac{3}{8}$
- D) $\frac{6}{8}$

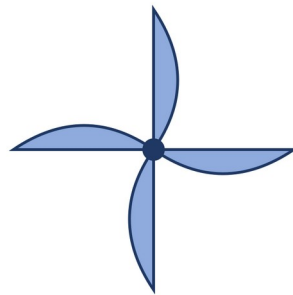
Question 14

What is 60% of 250?

- A) 75
- B) 100
- C) 125
- D) 150

Question 15

The pinwheel below is made of 4 identical blades arranged around its center. What is its order of rotational symmetry?



- A) 4
- B) 5
- C) 6
- D) 8

Question 16

Look at the sequence: 100, 91, 82, 73, ... What is the next number in the pattern?

- A) 55
- B) 64
- C) 70
- D) 75

Question 17

In the code below, each letter is replaced by a number, with A = 1, B = 2, C = 3, and so on up to Z = 26. Using the same pattern, what is the sum of the numbers for the word "SUN"?

A	B	C	D	E
1	2	3	4	5

... and so on, up to Z = 26

- A) 40
- B) 48
- C) 54
- D) 60

Question 18

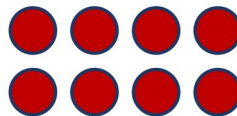
Beatriz has \$45. She spends $\frac{2}{5}$ of it on a gift. How much money does she have left?

- A) \$15
- B) \$20
- C) \$24
- D) \$27

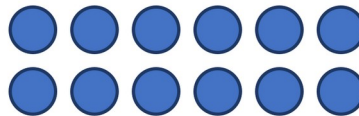
Question 19

The picture below shows red counters and blue counters. What is the ratio of red counters to blue counters, written in simplest form?

Red counters:



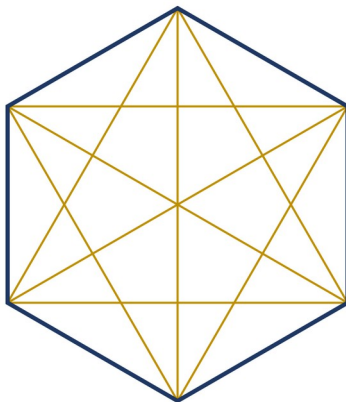
Blue counters:



- A) 2:3
- B) 3:2
- C) 1:2
- D) 8:12

Question 20

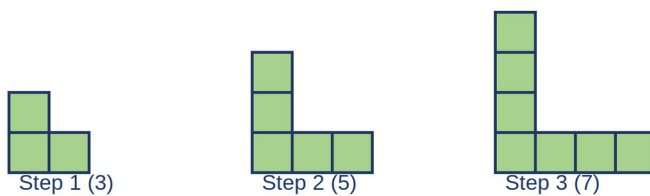
The regular hexagon below has all of its diagonals drawn. How many diagonals does a hexagon have in total?



- A) 6
- B) 9
- C) 12
- D) 15

Question 21

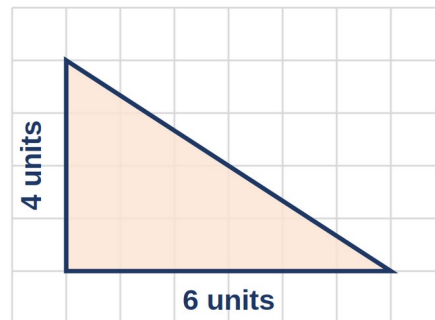
The pattern below shows a sequence of L-shaped tile arrangements, with the number of unit squares shown below each step. If the pattern continues in the same way, how many unit squares will Step 5 have?



- A) 7
- B) 9
- C) 11
- D) 13

Question 22

The right triangle below is drawn on a grid of unit squares, with its base and height labeled. What is the area of the triangle, in square units?



- A) 6
- B) 9
- C) 10
- D) 12

Question 23

The product of two numbers is 96. One of the numbers is 8. What is the sum of the two numbers?

- A) 20
- B) 24
- C) 28
- D) 32

Question 24

Four number cards show the digits 3, 4, 7, and 8. Using each digit exactly once, what is the largest possible 4-digit even number that can be made?

- A) 7,438
- B) 8,734
- C) 8,743
- D) 8,834

Question 25

In a class, the ratio of boys to girls is 3:4. If there are 35 students in total, how many girls are there?

- A) 12
- B) 15
- C) 20
- D) 25

Answer Key

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1. A	2. B	3. C	4. D	5. D
6. A	7. B	8. C	9. D	10. B
11. A	12. B	13. C	14. D	15. A
16. B	17. C	18. D	19. A	20. B
21. C	22. D	23. A	24. B	25. C