Question 1 (Arithmetic)

Find the value of $1.9 + 2.9 + 3.99 + 4.99 + 5.999 + 6.999$. Leave your answer to the nearest whole number)

A. 24
B. 25
C. 26
D. 27
E. 28

Ans: D

Question 2 (Pattern)

What is the next number in the sequence below?

$$2, 9, 15, 18, 28, 27, 41, 36\ldots$$

A. 35
B. 46
C. 53
D. 54
E. None of the above

Ans: D

Question 3 (Last Digit)

What is the last digit of the product of all the even numbers from 2 to 100?

A. 0
B. 2
C. 4
D. 6
E. 8

Ans: A

Question 4 (Logic)

Mr. Tan placed 10 coins on a table, with all heads up. He then asked his son to flip exactly 3 coins in each round. What is the least number of rounds needed to ensure all the coins have tails up?

A. 4
B. 5
C. 6
D. 7
E. 8

Ans: A

Question 5 (Angle)

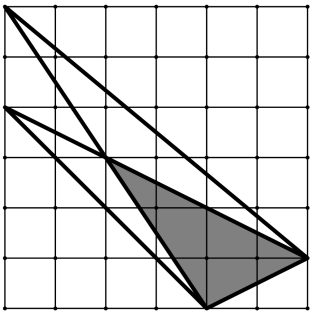
How many times do the hour hand and minute hand of a clock meet each other in 24 hours?

A. 23
B. 24
C. 25
D. 26
E. None of the above

Ans: E

Question 6 (Area)

The length of each small square is 1 cm. What is the area, in cm^2, of the shaded region?



A. 3 cm^2
B. 3.5 cm^2
C. 3.75 cm^2
D. 4 cm^2
E. 4.25 cm^2

Ans: D

Question 7 (Percentage)

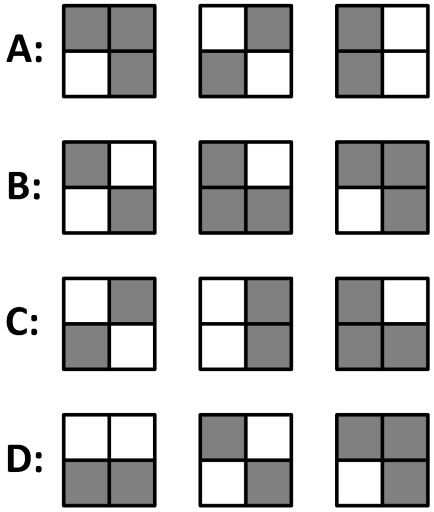
It is given that the length of a rectangle is 12 cm and the breadth of the rectangle is 20% of its perimeter. What is the area of the rectangle?

A. 40
B. 48
C. 72
D. 96
E. None of the above

Ans: D

Question 8 (Number Logic)

In the diagram below, there are four groups of grids. Each 2×2 grid represents a digit and each group of grids represents a 3-digit number. Given that the numbers are 238, 628, 895 and 913 (not in order), find the value of B.



A. 238
B. 628
C. 895
D. 913
E. None of the above

Ans: A

Question 9

A tree is planted every 20 metres along one side of a road. Including the trees at two ends of the road, there are 28 trees in total. 13 lamp posts are also installed along another side of the same road. The distance between any two neighbouring lamp posts is the same and there are lamp posts at the two ends of the road. What is the distance between two neighbouring lamp posts?

A. 42 metres
B. 43 metres
C. 44 metres
D. 45 metres
E. None of the above

Ans: D

Question 10 (Four Operations)

It is given that the difference between two 4-digit numbers is 6789. What is the greatest possible sum of these two numbers?

A. 8789

B. 9257
C. 13209
D. 26787
E. None of the above

Ans: C

Question 11

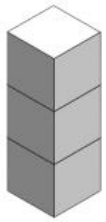
A shop sells 1 pen for $1, 5 pens for $4 and 10 pens for $7. Luke can buy up to 27 pens and Drake can buy up to 31 pens. If both Drake and Luke combine their money, what is the greatest number of pens they can buy?

A. 29 pens
B. 57 pens
C. 60 pens
D. 70 pens
E. None of the above

Ans: C

Question 12 (Area)

A cuboid (rectangular box) is made up of 3 cubes. The surface area of the cuboid is 224 cm^2. What is the sum of the total surface area of the 3 cubes?



A. 224 cm^2
B. 240 cm^2
C. 256 cm^2
D. 288 cm^2
E. None of the above

Ans: D

Question 13 (Pattern)

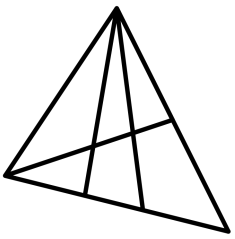
There are 256 people standing in line. The 1st person goes to the back of the line and the 2nd person in line sits down, so that the person who was in the 3rd is now the first person standing. Then this person in the front goes to the back of the line and next person sits down. This process is repeated until only one person remains standing. What was the original position in the line of the only remaining person?

A. 1st
B. 3rd
C. 124th
D. 256th
E. None of the above

Ans: A

Question 14 (Counting)

How many triangles are there in the figure below?



A. 13
B. 14
C. 15
D. 16
E. None of the above

Ans: C

Question 15 (Calendar)

In a certain year, there are more Sundays than Tuesdays, and there are more Saturdays than Thursdays. Which day of the week is 7 February in that year?

A. Monday
B. Tuesday
C. Wednesday
D. Thursday
E. None of the above

Ans: A

Question 16 (Arithmetic)

Richard is playing a number game in which he will do the mathematical operation indicated on a card. There are 6 different cards, and the 6 operations are "- 2", "+ 2", "× 2", "÷ 2", "+ 3", "× 3". If Richard starts with number 10, what is the largest number he can obtain using each of the 6 cards exactly once?

Ans: 54

Question 17 (Divisibility)

One of the digits of the number 5555 was changed. The new 4-digit number is a multiple of 75. What is the new 4-digit number?

Ans: 5550

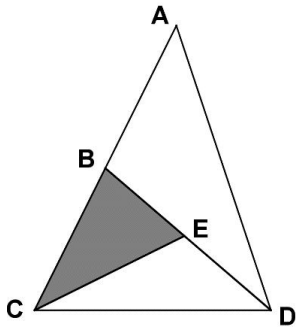
Question 18 (Number Logic)

The digits of a 2-digit number were reversed to obtain a new number. The new number is 72 more than the original number. What is the original number?

Ans: 19

Question 19 (Area)

In the diagram, the area of triangle ACD is $52\ cm^2$. Given that $BE = DE$ and $AB = BC$,what is the area of the shaded region BCE?



Ans: 13

Question 20 (Speed)

A truck delivers goods from Town A to Town B, and then the empty truck will travel back to Town A. The speed of the truck is 60 km/h when it is loaded and 80 km/h when it is empty. The total travelling time of the round trip is 3 hours and 30 minutes. Find the distance between Town A and Town B.

Ans: 120 km

Question 21 (Ratio)

A fruit store ordered apples from its supplier. The apples were delivered in batches. In the first batch, the store received $\frac{2}{7}$ of their order. In the second batch, the store received 55 kg of apples. The ratio of the number of apples received in the first two batches to the number of apples yet to be delivered is 3:5. How many kilograms of apples did the store receive in the first two batches?

Ans: 231

Question 22 (Remainder)

If 162 sweets are to be distributed equally among the students in Class 5A, there will be extra 6 sweets. If 345 sweets are to be distributed equally among these students, then there will be a shortage of 6 sweets. If 273 sweets are to be distributed equally among these students, then there will be no extras. What is the largest possible number of students in the Class 5A?

Ans: 39

Question 23 (Cryptarithm)

In the following, all the different letters stand for different digits. Find the value of the 3-digit number "SHE".

$$\begin{array}{cccc} & H & E \\ \times & H & E \\ \hline S & H & E \\ \hline \end{array}$$

Ans: 625

Question 24 (Ratio)

The ratio of the number of tables and chairs in a school is 7:5. After buying new chairs, the ratio becomes 4:3. Then new tables were bought and the ratio become 8:5. Given that the school bought 23 more tables than chairs, how many chairs were there originally?

Ans: 100

Question 25 (Logic)

A special calculator will keep on converting a whole number into the product of its digits, until the number becomes a 1-digit number. A certain 2-digit number can be converted 4 times by this special calculator. What is this 2-digit number?

Ans: 77