AMO SAMPLE QUESTIONS

PRIMARY 2 (GRADE 2)

Q1 On Saturday, Elise bought a furniture from a shop. The furniture will be sent to Elise's house in 30 days. On what day of the week will the furniture reach Elise's house?

Q2 The numbers in each row, column, and diagonal of the table below add up to 30. What is the value of X?

4		
	10	X
	2	

Q3 Alan has an old grandfather clock. The grandfather clock is moving slower than the normal clock. Every day at 9 am, Alan corrects it from 8:30 am to 9:00 am. One day, Alan went on vacation for 4 days. He left his house at 9:00 am after resetting the clock. When Alan returned after vacation to correct the clock to 9:00 am, what time did the clock show?

Q4 In the addition shown, different letters represent different digits. What is the sum of A, B and C?

			6	A
		3	B	9
	1	C	5	8
+	D	2	4	7
	4	3	2	1

Q5 Observe the pattern and find out the number of whole numbers in the sequence below.

1	2	2	3	3	3	4	4	4	4	5	…	9	10	10	10	10	10	10	10	10	10	10

PRIMARY 3 (GRADE 3)

Q1 In the pattern below, what will be the 78th letter written?

A	**B**	**B**	**C**	**C**	**D**	**A**	**B**	**B**	**C**	**C**	**D**	**A**	**…**

and so on

Q2 In a magic square, the sum of the numbers in each row and each column is the same. If exactly one number is changed in this picture, the result is a magic square. Which number must be changed?

22	1	16
9	13	19
10	25	4

Q3 The digits 1 through 9 are placed in the boxes shown, one per box. In each corner box is a prime number. In each box in the middle column is a square number. In the 3 boxes of the middle row is the least 3-digit number possible. What is that 3-digit number?

Q4 How many numbers between 10 and 99 have digits that differ by 3?

Q5 Judy has two more sisters that she has brothers. Her brother, Mark, has twice as many sisters as he has brothers. How many children are in their family?

AMO SAMPLE QUESTIONS

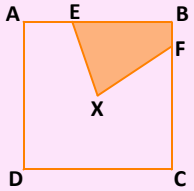
PRIMARY 4 (GRADE 4)

Q1 How many 2-digit odd numbers are greater than 18?

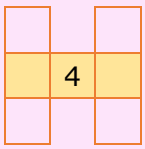
Q2 The sum of the page numbers of Chapter 2 (of a certain book) is 75. If there are 6 pages in Chapter 2, on what page does Chapter 2 begin?

Q3 How many different three-digit numbers of the form $AB5$ are divisible by 5?

Q4 E is one-quarter of the way from A to B. F is one-quarter of the way from B to C. ABCD is a square with an area of 64 and has center X. What is the area of the shaded region (EXFB)?



Q5 In the figure shown, the numbers 1, 2, 3, 5, 6, and 7 are to be placed one in each empty square. The following 4 sums are the same: the numbers in the left column, the numbers in the right column, and the numbers in each diagonal. What is the **greatest** possible product of the 3 numbers across the grey row?



PRIMARY 5 (GRADE 5)

Q1 Madison has five stickers in a row on a piece of paper. The star is one to the left of the puppy. The rainbow is to the right of the heart. The puppy is three to the left of the kitten. Which sticker is in the middle of the row?

Q2 For a certain 3-digit number:

- the digits are in increasing order
- the difference of the greatest and least digits is 7
- it is a multiple of 9 and greater than 200.

Find the 3-digit number.

Q3 In the Marble Club, the average number of marbles the members have is 100. When Person X joins the club with his 80 marbles, the average number of marbles per member becomes 96. How many people, including Person X, are in the Marble Club?

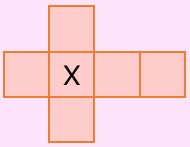
Q4 Each student in an art class has 48 identical 1 cm cubes. Each student glues all of his or her cubes together to make a rectangular solid. No two solids are identical. What is the maximum number of students in that art class?

Q5 Emily plays a game that uses a marker, a coin and a number line. Her marker begins at zero on the number line. She flips the coin. If the coin lands heads up, she moves her marker 3 units to the right. If the coin lands tails up, she moves her marker 10 units to the right. Therefore there are some numbers that the marker cannot land on, such as 1, 2, 4 and 5. What is the greatest whole number on the number line that cannot be landed on?

AMO SAMPLE QUESTIONS

PRIMARY 6 (GRADE 6)

Q1 In the grid shown, the numbers 1, 2, 3, 4, 5 and 6 are to be placed, one per square. The sum of the numbers in the row going across is 11. The sum of the numbers in the column going down is also 11. What is the number in the box with the **X**.



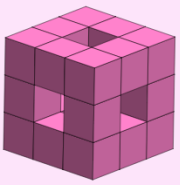
Q2 The sum of the page numbers of Chapter 3 (of a certain book) is 374. If there are 11 pages in Chapter 3, on what page does Chapter 3 begin?

Q3 How many different three-digit numbers of the form $A5B$ are divisible by 9? Note that A and B could be the same digit.

Q4 In the multiplication problem at the right, each letter represents a different digit. What 4-digit number is represented by MATH?

$$\begin{array}{cccc} & M & A & T & H \\ \times & & & & 4 \\ \hline & H & T & A & M \end{array}$$

Q5 A 3x3x3 cube is built our of twenty-seven 1x1x1 blocks. Then, seven 1x1x1 blocks are removed. Specifically, the centre block for each of the six faces of the cube is removed and the centre block of the cube is removed. What is the total surface area of the modified cube?



SECONDARY 1 (GRADE 7)

Q1 Suppose there are 6 different coloured balls in a bag, such that there are 7 balls of the first colour, 8 balls of the second colour, 9 balls of the third colour and so on. What is the least number of balls that must be picked from the bag without looking to ensure balls of all colours are picked?

Q2 216 cubes of side 1cm each are stacked to form one large cube. If the entire surface of the new cube is painted black, how many unit cubes are left unpainted?

Q3 In a house, there are 10 doors and 10 accompanying keys. Each door can only be opened by its accompanying key. If the 10 keys have been mixed up, find the maximum number of attempts one must make before all the doors can be opened.

Q4 Find the number of digits in the product $2^5 \times 4^4 \times 5^9$.

Q5 If we start writing numbers backwards from 1000 (1000999998997…), what will be the 2014^{th} digit?

AMO SAMPLE QUESTIONS

SECONDARY 2 & 3 (GRADE 8 & 9)

Q1 Find the value of A.

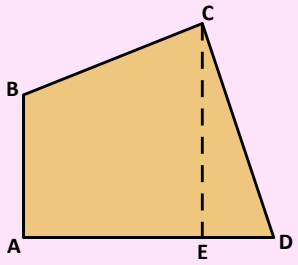
88	35	10	1
35	20	7	2
10	A	4	1
1	2	1	2

Q2 Suppose $2x - 3y = -15$ and $6x - 8y + z = 64$. Find the whole number value of $y + z$.

Q3 Find the least value of whole number N, with N > 10, so that the expression $3N - 5$ is both a perfect square and a perfect cube.

Q4 A lattice point is a point with integer coordinates. A straight line segment is drawn between points A(– 6, – 5) and B(24, 19). Including the endpoints, how many points on straight-line segment AB are lattice points?

Q5 In the following figure, $CD = CB, \angle DCB = \angle DAB = \angle CEA = 90^o$ and $CE = 3.85$ cm. Find the area of quadrilateral $ABCD$.



Answers of Sample Questions:

PRIMARY 2 (GRADE 2)
Q1. Monday
Q2. 6
Q3. 7:00 am
Q4. 19
Q5. 55

PRIMARY 3 (GRADE 3)
Q1. D
Q2. 9
Q3. 618
Q4. 13
Q5. 13

PRIMARY 4 (GRADE 4)
Q1. 41
Q2. 10
Q3. 90
Q4. 16
Q5. 60

PRIMARY 5 (GRADE 5)
Q1. 3
Q2. 279
Q3. 5
Q4. 9
Q5. 17

PRIMARY 6 (GRADE 6)
Q1. 1
Q2. 29
Q3. 10
Q4. 2178
Q5. 72

SECONDARY 1 (GRADE 7)
Q1. 51
Q2. 64
Q3. 55
Q4. 11
Q5. 0

SECONDARY 2&3 (GRADE 8&9)
Q1. 7
Q2. 109
Q3. 23
Q4. 7
Q5. 14.8225 cm^2