**SASMO 2015 Primary 6 [15 MCQ + 10 NON-MCQ = 25 Q]**

Starting Score = 15 marks (to avoid negative marks); Max Possible Score = 85 marks

Section A (Correct answer = 2 marks; no answer = 0; incorrect answer = minus 1 mark)

1.	Fill in the blank: 6 tens 9 ones greater than 7 is the same as 1 ten 6 ones less than _____.

	(a)	46
	(b)	60
	(c)	76
	(d)	92
	(e)	None of the above

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2.	The diagram shows how an equilateral triangle can be cut into four pieces and rearranged to form a square. This solution of the Haberdasher's Puzzle is discovered by Henry Dudeney (1857 – 1930).
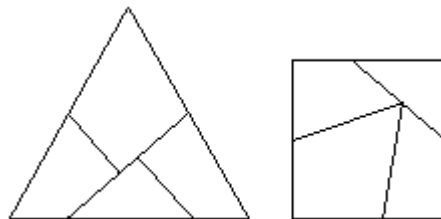
	If the length of the square is 16 cm and the height of the triangle is 21 cm, find the length of the triangle, correct to the nearest whole number.

	(a)	23 cm
	(b)	23 cm
	(c)	24 cm
	(d)	25 cm
	(e)	26 cm

3.   An operator ✧ acts on two numbers to give the following outcomes:

$$3 ✧ 2 = 65$$
$$5 ✧ 3 = 158$$
$$6 ✧ 1 = 67$$
$$9 ✧ 4 = 3613$$

What is 7 ✧ 5 equal to?

(a)   1235
(b)   1335
(c)   3512
(d)   3513
(e)   None of the above

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4. 3^4 means 3 multiplied by itself 4 times, i.e. $3^4 = 3 \times 3 \times 3 \times 3 = 81$. Find the last digit of 6^{10}.

(a)   0
(b)   1
(c)   6
(d)   8
(e)   None of the above

5. Find the missing term in the following sequence: 2, 5, 10, 17, _____, 37.

    (a) 23
    (b) 24
    (c) 26
    (d) 27
    (e) 29

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6. A whole number multiplied by itself will give a special type of numbers called perfect squares. Examples of perfect squares are 9 (= 3 × 3) and 16 (= 4 × 4). A perfect square year is a year which is a perfect square. When was the previous perfect square year?
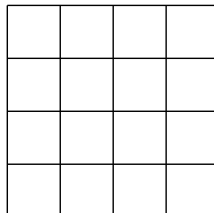
    (a) 1764
    (b) 1849
    (c) 1936
    (d) 2012
    (e) None of the above

7.   If the five-digit number 2345N is divisible by 6, find N.

    (a) 0
    (b) 2
    (c) 4
    (d) 6
    (e) 8

8.   How many rectangles are there in a 4×4 square grid?
      Note: A square is also a rectangle.

    (a) 70
    (b) 90
    (c) 100
    (d) 110
    (e) None of the above

9.   The height of a man is 150 cm, correct to the nearest centimetre. What is the lowest possible height of the man?

(a)   149 cm
(b)   149.4 cm
(c)   149.5 cm
(d)   149.9 cm
(e)   None of the above

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10.   Simplify the following fraction: $\dfrac{1}{2+\dfrac{3}{4+\dfrac{5}{6}}}$.

(a) $\dfrac{2}{33}$

(b) $\dfrac{29}{76}$

(c) $2\dfrac{1}{12}$

(d) $2\dfrac{18}{29}$

(e)   None of the above

11. A palindromic number is a whole number that reads the same forward and backward. For example, 1221 is a palindromic number. How many 4-digit palindromic numbers are there?

    (a) 19
    (b) 90
    (c) 100
    (d) 9000
    (e) None of the above

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12. A bag contains some sweets that can be divided equally among 3, 4, 6 or 7 children with no remainder. What is the smallest possible number of sweets in the bag?

    (a) 42
    (b) 84
    (c) 168
    (d) 504
    (e) None of the above

13. Given that $x \times y \times z = 2015$, and x, y and z are whole numbers such that $x < y < z$ how many possible triples (x, y, z) are there?

(a) 1
(b) 4
(c) 5
(d) 27
(e) None of the above

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14. Daniel wants to cut rectangular cards of length 3 cm by 2 cm from a rectangular sheet 50 cm by 19 cm. Find the biggest number of cards that can be cut from the sheet.

(a) 144
(b) 150
(c) 158
(d) 159
(e) None of the above

15. A train travels at a speed of 90 km/h. The length of the train is 300 m. Find the time taken by the train to pass completely through a 4.5 km tunnel.

   (a) 3 min
   (b) 3 min 2 s
   (c) 3 min 12 s
   (d) 3 min 20 s
   (e) None of the above

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Section B (Correct answer = 4 marks; incorrect or no answer = 0)

16. The product of two numbers is 1000. Neither of the two numbers has 10 as a factor. Find the difference of these two numbers.

17. Given that 4! means $4 \times 3 \times 2 \times 1 = 24$, find the number of consecutive zeros at the end of 14!

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18. Jerry drives 2000 km during a trip. He rotates the tyres (four tyres on the car and one spare tyre) so that each tyre has been used for the same distance at the end of the trip. How many kilometres are covered by each tyre?

19. Jane is at a road junction with four possible roads to her friend's house, but she did not know which road to take. So she asks some passerby for direction.

    First Passerby: Your friend's house is not on Road 1.
   Second Passerby: I did not want to live near your friend, so I moved from Road 2 to Road 4.
    Third Passerby: I have taken Road 2 to the beach before, but I have not passed by any house.
    Fourth Passerby: Your friend stays on Road 3.

    If only one of the passerby is telling the truth, on which road does Jane's friend live?

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20. The diagram shows a rectangle being divided into 3 smaller rectangles and a square. If the perimeter of the unshaded rectangle is 48 cm and the area of the square is 36 cm^2, find the total area of the shaded rectangles.
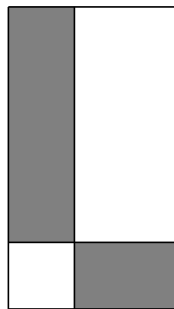
21.	What are the dimensions of a cuboid that is made from 2015 one-centimetre cubes if all the sides of the cuboid are longer than 1 cm?

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22.	A number gives a remainder of 3 when divided by 10. Another number gives a remainder of 4 when divided by 10. The sum of these two numbers is multiplied by 6 to give the third number. What is the remainder when this third number is divided by 10?

23. Find the 2015th term of the following sequence: 1, 2, 2, 3, 3, 3, 4, 4, 4, 4, …

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24. In a school hall, $\frac{8}{13}$ of the chairs are arranged in rows of 7, and $\frac{5}{13}$ of the chairs are arranged in rows of 11. The rest of the chairs are stacked up. If there are less than 2000 chairs in the hall, find the total number of chairs in the hall.

25.   Find the remainder when 3^{2015} is divided by 4.

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