



**INTERNATIONAL
SINGAPORE MATHS
COMPETITION
2016
(Primary 4)**

1 hour 30 minutes

Instructions to participants

1. Do not open the booklet until you are told to do so.
2. Attempt ALL 25 questions.
3. Write your answers neatly in the Answer Sheet provided.
4. Marks are awarded for correct answers only.
5. All figures are not drawn to scale.
6. Neither mathematical tables nor calculators may be used.

Questions in Section A carry 2 marks each, questions in Section B carry 4 marks each and questions in Section C carry between 6 to 10 marks each.

Jointly organised by



Section A

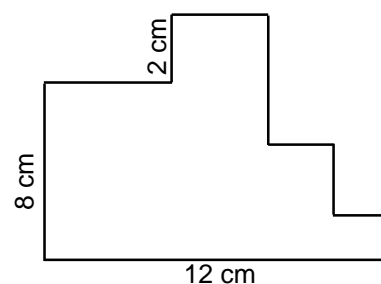
Each of the questions 1 to 10 carries 2 marks.

1. Fill in the three blanks such that the numbers form the smallest 6-digit number that is a multiple of 3, 4 and 5.

2	8	9			
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2. The smallest common multiple of two numbers, A and B, is 180. The largest common factor is 12. If the larger number is not a multiple of the smaller number, what are the numbers A and B?

3. Figure A has sides which meet at right angles. What is the perimeter of the figure?

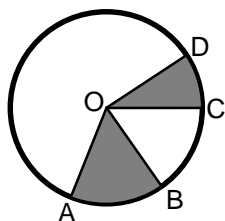


4. The table below shows part of a TV programme guide.

Time	Programme
8:45 am	Cartoon: Care Bears
9:35 am	World at Sports
10:10 am	News
10:30 am	Discovery Science
11:50 am	Drama Serial: Flash

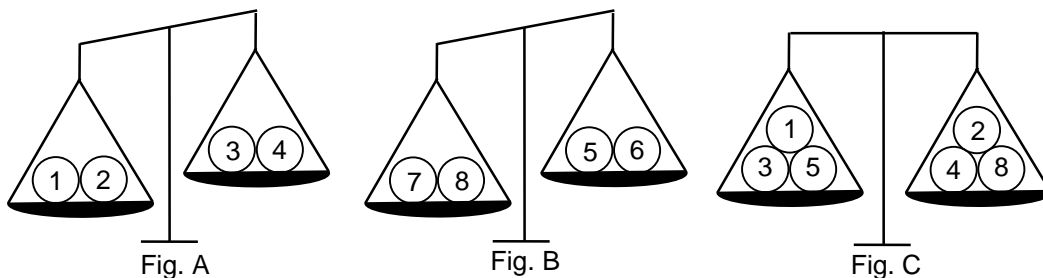
One of the programmes is $\frac{1}{4}$ the length of another programme. What are the two programmes?

5. If $\angle AOB = 60^\circ$ and $\angle COD = 30^\circ$, what fraction of the area of the circle is shaded?



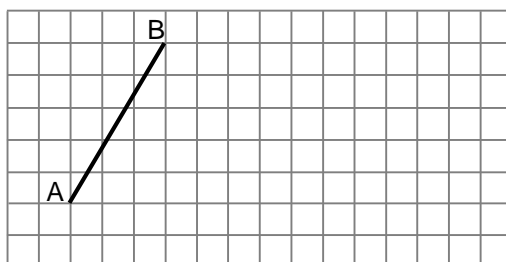
6. When a is divided by b , the result is $\frac{3}{4}$. When b is divided by c , the result is $\frac{5}{6}$.
 What is the fraction when a is divided by c ?
 Give your answer in the lowest term.

7. There are eight balls, numbered 1 to 8. Six of the balls weigh the same, while the other two are each 1 g lighter than the rest. The balls are placed on a set of scales as shown.

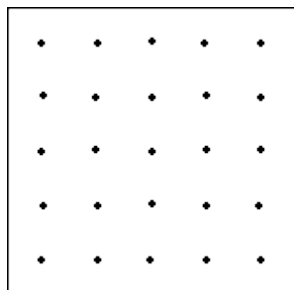


Which two balls are lighter than the rest?

8. In the square grid, AB forms one side of a triangle ABC in which $\angle ABC$ is a right angle and BC is twice as long as AB. Complete the drawing of the triangle ABC within the grid.



9. Draw the largest possible quadrilateral inside the box such that it
- touches the dots only at the 4 corners,
 - has 2 pairs of parallel lines and
 - has no lines of symmetry.



10. The length and width of a rectangle are both doubled.
Which of the following statement about the area and perimeter is true?
- (A) The area and the perimeter are unchanged.
 (B) The area and the perimeter are both doubled.
 (C) The area is 4 times the original area and the perimeter is doubled.
 (D) The area is doubled and perimeter is 4 times as large as the original perimeter.
 (E) The area and the perimeter are both 4 times as large.

Section B

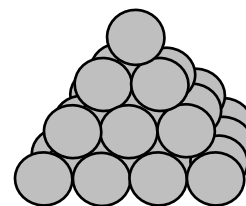
Each of the questions 11 to 20 carries 4 marks.

11. Using the numbers 1 to 9, fill in the blanks below to obtain the largest possible answer.
Use each number at most once.

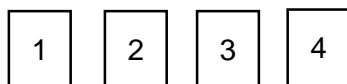
$$[\square \div \square \times (\square + \square)] - (\square \times \square + \square - \square) = \text{largest possible answer}$$

12. $\frac{2}{3}$ of a number minus 8 is equal to $\frac{1}{4}$ of the number plus 7. What is the number?

13. Fruit seller A stacks her oranges into a 4-layer high square-based pyramid structure as shown in the figure below. Fruit seller B manages to stack his oranges in a similar pyramid structure but 6 layers high. How many oranges did Fruit seller B use to make his pyramid?



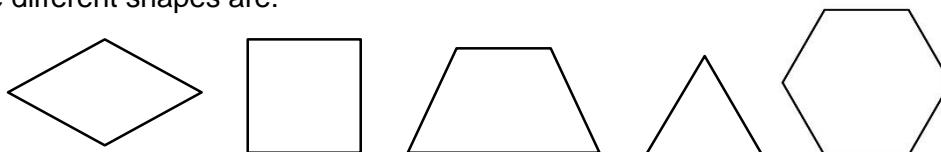
14. Katie has four picture cards. She placed the cards in a row according to the following instructions.



- The hat is not to the left of the coat.
- The rainbow is not to the right of the umbrella.
- Either the hat or the rainbow is on the left end of the row.
- Either the hat or the umbrella is next to the rainbow.

State the pictures that are in positions 1, 2, 3 and 4.

15. Gina has a box containing different numbers of 5 different shapes. The different shapes are:



The table below lists some of the properties of these shapes and the number of pieces which have these properties. Fill in the missing information in the table.

Property	Number of pieces
Only 1 pair of parallel lines	3
Exactly 2 pairs of parallel lines	11
Exactly 3 pairs of parallel lines	2
No parallel lines	8
Exactly 1 line of symmetry	
Exactly 2 line of symmetry	
Exactly 3 line of symmetry	
Exactly 4 line of symmetry	5

16. Ali has drawn 3 triangles.
The 1st is a triangle whose sum of two of its angles is 90° .
The 2nd is a triangle whose sum of two of its angles is less than 90° .
The 3rd is a triangle whose sum of two of its angles is 120° .

For each of the statements below, put a \checkmark to indicate whether it is True or False.
The first one has been done for you.

		True	False
1.	The sum of the three angles of each triangle is 180° .	\checkmark	
2.	None of the angles drawn are more than 90° .		
3.	All of the triangles could have sides of different lengths.		
4.	All of the triangles could have 2 equal sides.		
5.	All of the triangles could have 3 equal sides.		

17. 3 February 1999, fell on a Wednesday.
On what day of the week will 3 February 2020 be?
18. $\frac{1}{3}$ of the number of boys and $\frac{1}{3}$ of the number of girls in a class left the classroom to help out at an event in the hall. $\frac{1}{2}$ of the remaining pupils went to meet with their CCA teachers. There were only 7 pupils in the classroom after that. How many pupils were in the classroom at the beginning?
19. Daniel has three types of marbles: small, medium and large. He finds that 9 small marbles and 3 medium marbles weigh as much as 5 large marbles. He also finds that 1 medium marble and 1 large marble weigh as much as 5 small marbles.
How many small marbles weigh as much as 5 large marbles?

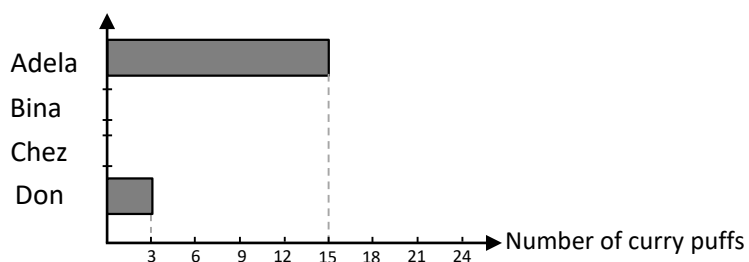
20. In the following calculation, a and b represent missing digits.
If $79\ 287 \div a21 = 2b7$, then what is the value of $a + b$?

Section C

Questions 21, 22, 23, 24 and 25 carry 6, 7, 8, 9 and 10 marks respectively.

21. Adela, Bina, Chez and Don each bought some curry puffs for breakfast.
- Adela bought 5 times as many curry puffs as Don.
 - Adela, Bina and Don bought $\frac{2}{3}$ of the total number of curry puffs bought by the four of them.
 - Bina and Chez bought equal number of curry puffs.

Complete in the chart below by drawing the bars for both Bina and Chez according to the given information.



22. Emily wants to draw rectangles whose sides are whole number of units.
How many different rectangles can she draw such that the perimeter of each of them is 118 cm?

23. There was a total of 1450 sheep, goats and horses in a farm. When $\frac{7}{8}$ of the sheep, $\frac{3}{4}$ of the goats and $\frac{3}{5}$ of the horses were sold, there was an equal number of each of these three animals left in the farm. How many of each of these animals were there in the farm at first?
24. James asked his friends to guess the four different digits of his secret 4-digit code number. Kenneth guessed 1534, Leonard guessed 4058 and Mike guessed 9780. James told his friends that they each had guessed two digits correctly and that the two correct digits were not next to each other. What are the 4 digits making up James' secret code number?
25. Mr Ang had \$135 and Mr Bok had \$96. Mr Bok spent twice as much as Mr Ang. If Mr Ang had twice as much money left as Mr Bok after that, how much did Mr Ang spend?

End of Paper