



Singa Math Assessment Test 2022

For Grades 7/8

Time: 45 minutes

NAME:

GRADE:

COUNTRY:

INSTRUCTIONS

1. Please **DO NOT OPEN** the contest booklet until the Proctor has given permission.
2. There are 25 questions.
Section A: Questions 1 to 20 score 2 marks each, no points are deducted for unanswered or wrong answer.
Section B: Questions 21 to 25 score 2 marks each, no points are deducted for unanswered or wrong answer.
3. Shade your answers neatly using a 2B pencil in the Answer Entry Sheet.
4. **PROCTORING:** No one may help any student in any way during the contest.
5. Students must show detailed working and transfer answers to the Answer Entry Sheet.
6. **No exam papers and written notes can be taken out by any contestant.**

Section A: 20 Multiple Choice Questions (20 x 2 marks = 40 marks)

For questions 1 to 20, choose the correct option and write its number (1, 2, 3 or 4) in the brackets provided. Then shade your option in the Answer Entry Sheet (AES) sheet provided.

1. The Fibonacci sequence is as follows:

1, 1, 2, 3, 5, 8, 13, x , . . .

Find the value of x .

- (1) 5
- (2) 21
- (3) 26
- (4) 33

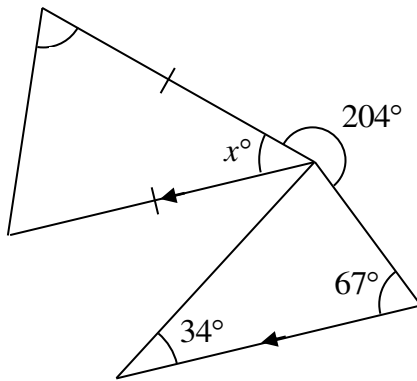
2. It is given that x and y are integers such that $-9 \leq x \leq 7$ and $-2 \leq y \leq 5$. Calculate the greatest value of $x^2 - y^2$.

- (1) 24
- (2) 49
- (3) 81
- (4) 85

3. Express $1000 \times 0.5\dot{1}\dot{7}$ as a repeating decimal.

- (1) $517.\dot{0}$
- (2) $517.\dot{5}$
- (3) $517.\dot{5}\dot{1}$
- (4) $517.\dot{1}\dot{7}$

4. Find the value of x in the figure.



- (1) 34
(2) 43
(3) 67
(4) 79
5. The exterior angle of a regular polygon is one-third that of its interior angle. State the type of polygon.
- (1) Hexagon
(2) Heptagon
(3) Octagon
(4) Decagon

6. A sum of money is divided among 3 siblings Ahmad, Siti, and Syakira in the ratio 5 : 9 : 4 respectively. The difference between Ahmad's and Siti's share is \$240. If the sum of money is to be redistributed equally among the 3 siblings, how much more money will Syakira receive?

- (1) \$60
- (2) \$120
- (3) \$180
- (4) \$240

7. State the algebraic expression that represents: Thrice of x minus 7 times the square root of y .

- (1) $3x - 7\sqrt{y}$
- (2) $3x - y^2$
- (3) $x^3 - 7\sqrt{y}$
- (4) $x^3 - 7y^2$

8. Find the value of $\frac{y}{x}$ if $\frac{5x-2y}{7} = \frac{4x+3y}{6}$.

- (1) $\frac{33}{2}$
- (2) $\frac{10}{13}$
- (3) $\frac{2}{33}$
- (4) $\frac{10}{42}$

9. Given that $(2x - 3)(a - x) = -27 + 21x - 2x^2$, find the value of a .
- (1) 3
 - (2) 9
 - (3) 21
 - (4) 27
10. Given that $3m < 78\frac{1}{2}$, find the largest prime value of m .
- (1) 23
 - (2) 26
 - (3) 27
 - (4) 29
11. John can fix a jigsaw puzzle in 2 days. Xin Hui can fix the same type of jigsaw puzzle in 3 days. How many jigsaw puzzles can the two of them fix in 18 days?
- (1) 5
 - (2) 15
 - (3) 18
 - (4) 90

12. A museum has 2500 visitors on a particular week. The figure has been rounded off to 2 significant figures. What was the smallest possible number of visitors on that week?

- (1) 2449
- (2) 2450
- (3) 2499
- (4) 2549

13. The form teacher conducted a survey to find the distance of students' home from the school. The results are shown in the table below.

Distance from school (d km)	$0 < d \leq 1$	$1 < d \leq 2$	$2 < d \leq 3$	$3 < d \leq 4$	$4 < d \leq 5$
Number of students	13	x	8	7	3

When the data is represented on a pie chart, the angle of sector representing the class $3 < d \leq 4$ is 60° . Find the value of x .

- (1) 7
- (2) 10
- (3) 11
- (4) 12

14. Find the LCM of $2^3 \times 3 \times 5^3$ and $2^2 \times 3^2 \times 5 \times 7$.

- (1) 1260
- (2) 3000
- (3) 63000
- (4) 3780000

15. The readings of the Air Pollution Index (API) of a town in a period of seven days are as follows:

Day	Mon	Tue	Wed	Thu	Fri	Sat	Sun
API	70	82	76	x	64	53	58

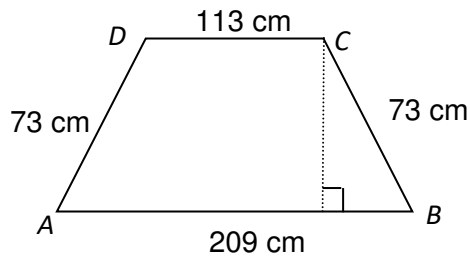
The mean of the data is 65. Determine the value of x.

- (1) 52
- (2) 61
- (3) 65
- (4) 70

16. Find the highest common factor (HCF) of $18xy^2$, $27x^3yz$ and $36x^2z^3$.

- (1) $3xyz$
- (2) $9x$
- (3) $108x^3y^2z^3$
- (4) $8748x^6y^3z^4$

17. In the diagram, AB is 209 cm, CD is 113 cm, BC and AD is 73 cm.



Find the shortest length from AB to CD .

- (1) 55 cm
 - (2) 67 cm
 - (3) 70 cm
 - (4) 96 cm
18. The cost price of a toy can be broken down into three components:
the cost of labour = \$6.40, the cost of material = \$20.80, and the cost of other overheads = \$4.20.

Find the ratio of the cost of labour : cost of material : cost of other overheads.
(Express your answer in the simplest form.)

- (1) 6.40 : 20.80 : 4.20
- (2) \$6.40 : \$20.80 : \$4.20
- (3) 32 : 104 : 21
- (4) 640 : 2080 : 420

19. Find the difference between the first two perfect squares that has digit '9' in the ones place.

- (1) 10
- (2) 40
- (3) 58
- (4) 81

20. State the algebraic expression that represents: Nine times the product of x and h minus the quotient when k is divided by $2y$.

- (1) $9hx - \frac{k}{2y}$
- (2) $9x9h - \frac{k}{2y}$
- (3) $9hx - \frac{2y}{k}$
- (4) $9(x+h) - \frac{2y}{k}$

Section B: 5 Open-ended Questions (5 x 2 marks = 10 marks)

Read the questions carefully. For questions 21 to 25, show your working clearly and write your answers in the blank provided. Then write and shade your answer in the Answer Entry Sheet (AES) sheet provided.

21. How many prime numbers between 0 and 9 can be expressed as the sum of two prime numbers?

Answer: _____

22. Find the positive value of n in $n^2 + 5n - 6 = 0$.

Answer: _____

23. Each figure in the sequence below consists of a number of diamonds.



Figure 1

Figure 2

Figure 3

Figure no.	1	2	3	115
No of diamonds	5	7	9		

How many diamonds are there in Figure 115?

Answer: _____

24. In the equation, $13 = \sqrt{\frac{3x}{7} - 11^2}$, find the value of x . Round your answer to the nearest integer.

Answer: _____

25. The currency tables from two money changers are shown below.

Ang Mo Kio Money Changer

Singapore dollar to one unit of foreign currency	Currency	Buying	Selling
	Sterling Pound (£)	1.852	1.918
	Euro (€)	1.604	1.626

Bishan Money Changer

Singapore dollar to one unit of foreign currency	Currency	Buying	Selling
	Sterling Pound (£)	1.864	1.924
	Euro (€)	1.610	1.632

Agnes is planning a trip to Paris. She has £3800 left from her last trip to London.

Agnes wants to sell the £3800 and use it to buy Euros from the same money changer. What is the maximum amount of Euros she could get?
(Round your answer to the nearest whole number.)

Answer: _____

