



FSP MATHEMATICS CONTEST 2022

QUESTION BOOKLET GRADE 7 & 8

VIBRANT YOUNGSTERS

**TIME ALLOWED:
75 Mins.**

Maximum Marks: 60



**INTERNATIONAL FAMOUS STUDENTS PLATFORM
VIBRANT YOUNGSTERS COMPETITIONS**

INSTRUCTIONS

- 1) DON'T START ATTEMPTING THE PAPER UNTIL INSTRUCTED BY THE INVIGILATOR.
- 2) INSTRUCTIONS FROM THE EXAMINATION INVIGILATOR MUST BE CARRIED OUT PROMPTLY.
- 3) CAREFULLY RECHECK YOUR NAME, FATHER NAME, SCHOOL NAME, ADDRESS ETC AT THE BUBBLE SHEET / ANSWER SHEET.
- 4) RECORD ALL ANSWERS ON THE BUBBLE SHEET ONLY. SELECT BEST ANSWER FROM THE FOUR GIVEN OPTIONS AND MARK ONLY ONE OPTION IN EACH QUESTION.
- 5) USE BLUE / BLACK INK TO FILL UP THE CIRCLES FOR YOUR ANSWERS ON THE BUBBLE SHEET. USE OF LEAD PENCIL IS NOT ALLOWED.
- 6) USE OF ANY HELPING MATERIAL INCLUDING CELL PHONES AND ELECTRONIC DEVICES IS STRICTLY PROHIBITED.
- 7) EVERY CORRECT ANSWER EARNS THREE POINTS. THERE WOULD BE NEGATIVE MARKING. ONE POINT WOULD BE DEDUCTED FOR EVERY INCORRECT ANSWER.
- 8) CANDIDATES MAY NOT LEAVE THE EXAMINATION ROOM UNESCORTED FOR ANY REASON, AND THIS INCLUDES USING THE WASHROOM.
- 9) NO MATERIALS OR ELECTRONIC DEVICES SHALL BE BROUGHT IN TO THE ROOM.
- 10) THERE ARE FIVE CATEGORIES OF THE CONTEST AS UNDER:
 - A) VIBRANT YOUNGSTERS (GRADE 1 & 2)
 - B) VIBRANT YOUNGSTERS (GRADE 3 & 4)
 - C) VIBRANT YOUNGSTERS (GRADE 5 & 6)
 - D) VIBRANT YOUNGSTERS (GRADE 7 & 8)
 - E) VIBRANT YOUNGSTERS (GRADE 9 & 10 / 0-LEVELS)
- 11) ONLY REGISTERED STUDENTS CAN PARTICIPATE IN THE CONTEST.
- 12) NO CANDIDATE SHALL TAKE OUT OF THE HALL ANY ANSWER BOOK(S) OR PART OF AN ANSWER BOOK, WHETHER USED OR UNUSED, OR OTHER SUPPLIED MATERIAL.
- 13) IF A PARTICIPANT DOES NOT UNDERSTAND A WORD OR PHRASE ON THE EXAM PAPER, NEITHER EXAMINER NOR INVIGILATOR IS PERMITTED TO ANSWER.
- 14) FOR INFORMATION ABOUT UPCOMING CONTESTS OR PROVIDING VALUABLE FEEDBACK, PLEASE VISIT fspcompetitions.org
- 15) ANY ACADEMIC MISCONDUCT OR MALPRACTICE MUST BE REPORTED TO FSP VIBRANT YOUNGSTERS AT info@fspcompetitions.org

"Mathematics is the most beautiful and the most powerful creation of the human spirit."
(Stefen Banach)

What is Mathematics?

M- Miracle of nature
A- Art of mathematic
T- Tool of knowledge
H- Habit of problem solving
E- Evaluation of Civilization
M- Magic of numbers
A- Application of rules
T- Tool of knowledge
I- Ideas of intellect
C- Creativity of algebra
S- Science of learning

National policy on education 1986 States:

'Mathematics should be e visualized as the vehicle to train a child to think, reasons, analyses, and to articulate logically'

Develop interest in mathematics:

The best and effective way to have students stop saying "I am not good at math".

To make student interest in mathematics through following points.

- Educational toys
- Creative math project
- Fun math activity or co-curricular activities.
- Relate math problem in our daily life.

How can student get ?% marks?

- Start studying regularly.
 - Be clear with your concepts.
 - Compete with yourself.
 - Study plan
 - Take out time for yourself.
 - Have a deep sleep.
- Good luck!

Future of mathematician:

Future of mathematician is very bright they become:

- 1) Computer programmer: the job of a computer programmer is to write codes that allows computer application to runs.
- 2) Mathematician: they develop new theories, concepts and rules which are used in other field like science, business and astronomy etc. to resolve their problems.
- 3) Statistician: they offer job to collect data verify it and interprets data to inform client about next strategies or a steps.
- 4) Professor: Professor Job is most prestigious for any education department.
- 5) Chartered accountant: chartered accountant is to perform financial function for a company (calculate taxes, complying with government regulation on business).
- 6) Actuary: Actuary is a profession who deals with measurement and management of risks associated with markets, trades and business.
- 7) Investment manager: investment manager looked after investment of peoples.

Article By:
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1) Which of the following is true?

- (A) $20 = (100)0$
- (B) $102 \times 108 = 1016$
- (C) $22 \times 33 = 726$
- (D) $23 > 32$

2) If $(-3)^4 \times (-3)^6 = (-3)^?$ then? =

- (A) 4
- (B) 10
- (C) 6
- (D) 12

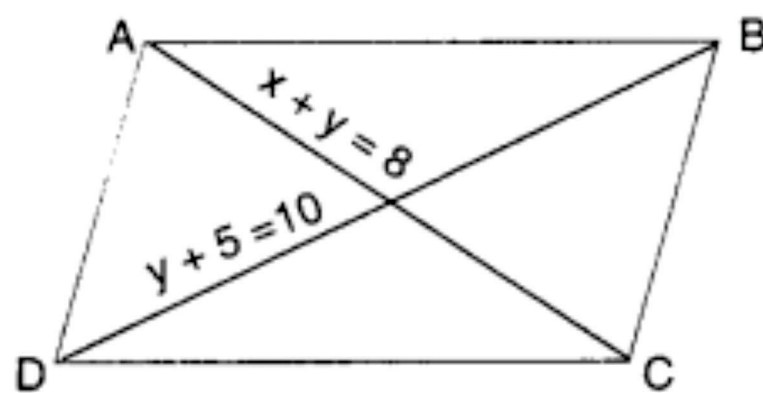
3) If x is a rational number 'a' and 'b' ($a > b$) are whole numbers, then the value of $x_a \div x_b$ is

- (A) x_{a+b}
- (B) x_{a-b}
- (C) x_{ab}
- (D) x_a

4) The type of polygon in which its all angles and sides are equal is classified as:

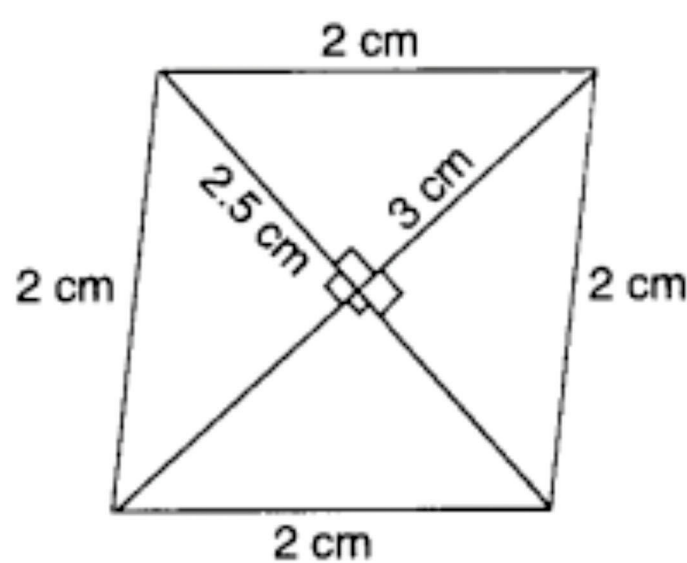
- (A) regular octagon
- (B) regular hexagon
- (C) regular polygon
- (D) regular pentagon

5) ABCD is a parallelogram as shown. Find x and y :



- (A) 1, 7
- (B) 2, 6
- (C) 3, 5
- (D) 4, 4

6) The area of the quadrilateral is:

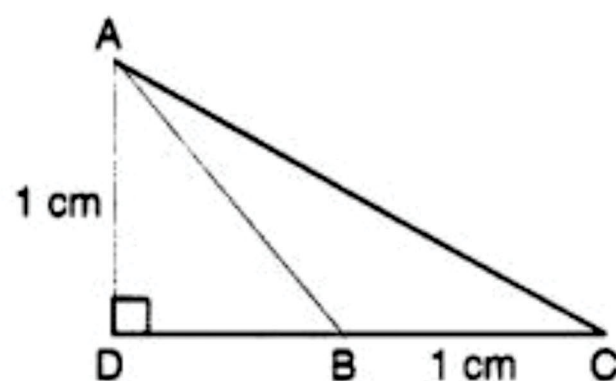


- (A) 3.75 cm^2
- (B) 7.5 cm^2
- (C) 3 cm^2
- (D) 10 cm^2

7) 8 persons can stay in a cubical room. Each person requires 27 m^3 of air. The side of the cube is:

- (A) 6 m
- (B) 4 m
- (C) 3 m
- (D) 2 m

8) Find the area of $\triangle ABC$:



- (A) 1 cm^2
- (B) 2 cm^2
- (C) 4 cm^2
- (D) 12 cm^2

9) ABCD is a rectangle and AC & BD are its diagonals. If AC = 10 cm, then BD is:

- (A) 10 cm
- (B) 5 cm
- (C) 15 cm
- (D) 20 cm

10) Sum of all interior angles of a polygon with (n) sides is given by:

- (A) $(n - 2) \times 180^\circ$
- (B) $n - 2 \times 180^\circ$
- (C) $(n + 2) \times 180^\circ$
- (D) $n + 2 \times 180^\circ$

11) 6 pipes are required to fill a tank in 80 minutes. How long will it take if only 5 pipes of the same type are used?

- (A) 96 minutes
- (B) 102 minutes
- (C) 106 minutes
- (D) 108 minutes

12) If $x \propto y$ and $x_1=5, y_1=210$ and $x_2 = 2$, then find y_2 ?

- (A) 200
- (B) 84
- (C) 99
- (D) 70

13) The scale of a map is given as 1:300. Two cities are 4 km apart on the map. The actual distance between them is:

- (A) 1000 km
- (B) 1100 km
- (C) 1200 km
- (D) 1300 km

14) If x and y are inversely proportional, then which one is true?

- (A) $x_1/y_1 = x_2/y_2$
- (B) $x_1/x_2 = y_1/y_2$
- (C) $x_1/x_2 = y_2/y_1$
- (D) $x_1.x_2 = y_1.y_2$

15) If 300 Kg of coal cost 6000₹, then find the cost of 120 kg of coal?

- (A) 1200₹ (B) 2400₹ (C) 3200₹ (D) 4200₹

16) A rational number is a number that can be put in the form p/q , where p and q are:

- (A) natural numbers and $q \neq 0$
(B) whole numbers and $q \neq 0$
(C) non-negative integers and $q \neq 0$
(D) integers and $q \neq 0$

17) The number of rational numbers between two rational numbers is _____?

- (A) definite
(B) not definite
(C) One
(D) None of these

18) A bag has 4 red balls and 4 green balls, what is the probability of getting a red ball randomly?

- A) $1/4$ (B) $1/8$ (C) $1/2$ (D) 0

19) Which of the following is the probability of an impossible event?

- (A) 1 (B) 0 (C) Between 0 and 1 (D) None of these

20) Kiran has Rs. 130 left after using 65% of total money she had on shopping. Find total money with Kiran before shopping.

- (A) 100 (B) 10 (C) 65 (D) 200

21) Sam is 78 kg and Sameer is 91 kg. Find the ratio of weight of Sam and Sameer.

- (A) $3/7$ (B) $7/6$ (C) $3/7$ (D) $6/7$

22) Length and width of a field are in the ratio 5 : 3. If the width of the field is 42 m then its length is:

- (A) 100 m (B) 80 m (C) 50 m (D) 70 m

23) In a school out of 340 students, 55% students are of Science. The remaining students are of Commerce. Find the number of students of Commerce.

- (A) 135 (B) 153 (C) 315 (D) 140

24) There are 1275 trees in Chaudhary Farm. Out of these 36% trees are of fruits. How many trees of fruits are there in Chaudhary Farm ?

- (A) 459 (B) 549 (C) 945 (D) 954

25) Find the greatest four-digit number that is a perfect square.

- (A) 9990
- (B) 9801
- (C) 9999
- (D) None of these

26) The number of digits in the square root of 78400 is

- (A) 1
- (B) 2
- (C) 3
- (D) 4

27) Which of the following can be the square of a natural number 'n'?

- (A) sum of the squares of first n natural numbers
- (B) sum of the first n natural numbers
- (C) sum of first (n – 1) natural numbers
- (D) sum of first 'n' odd natural numbers

28) If we add, $7xy + 5yz - 3zx$, $4yz + 9zx - 4y$ and $-3xz + 5x - 2xy$, then the answer is:

- (A) $5xy + 9yz + 3zx + 5x - 4y$
- (B) $5xy - 9yz + 3zx - 5x - 4y$
- (C) $5xy + 10yz + 3zx + 15x - 4y$
- (D) $5xy + 10yz + 3zx + 5x - 6y$

29) If we multiply $5x$ and $(-4xyz)$, then we get:

- (A) $20x^2yz$
- (B) $-20x^2yz$
- (C) x^2yz
- (D) $-2xyz$

30) The volume of a cuboid with length, breadth and height as $5x$, $3x^2$ and $7x^4$ respectively is:

- (A) $105x^7$
- (B) $105x^2$
- (C) $105x^4$
- (D) $105x$

THE END



ANSWER SHEET

INSTRUCTIONS:

- This is a generic answer sheet to be used by participants of all grades. Students of Grade 1-2 will fill in circles of first 20 questions. Grade 3-4 will fill in circles of 25 questions & Grade 5-10 will fill in circles of 30 questions.
- Please recheck your Name, Father Name, Garde & School written below, the same would appear at your certificate.
- Use of lead pencil is not allowed.
- Use only Black / Blue ink to fill in the circles.

Choose only ONE of the FOUR proposed answers (A,B,C or D) & fill in the circles with your answer.

Example of correctly filled table of answers.

A

B

D

Correct Filling Answer "C"

A

B

X

D

wrong filling

A

B

D

wrong filling

A

B

D

wrong filling

A

B

D

wrong filling

Q. No.	Answer			
1	<div><div></div></div>	<div>B</div>	<div>C</div>	<div>D</div>
2	<div>A</div>	<div><div></div></div>	<div>C</div>	<div>D</div>
3	<div>A</div>	<div><div></div></div>	<div>C</div>	<div>D</div>
4	<div>A</div>	<div>B</div>	<div><div></div></div>	<div>D</div>
5	<div>A</div>	<div>B</div>	<div><div></div></div>	<div>D</div>
6	<div><div></div></div>	<div>B</div>	<div>C</div>	<div>D</div>
7	<div><div></div></div>	<div>B</div>	<div>C</div>	<div>D</div>
8	<div>A</div>	<div>B</div>	<div>C</div>	<div><div></div></div>
9	<div><div></div></div>	<div>B</div>	<div>C</div>	<div>D</div>
10	<div><div></div></div>	<div>B</div>	<div>C</div>	<div>D</div>
11	<div><div></div></div>	<div>B</div>	<div>C</div>	<div>D</div>
12	<div>A</div>	<div><div></div></div>	<div>C</div>	<div>D</div>
13	<div>A</div>	<div>B</div>	<div><div></div></div>	<div>D</div>
14	<div>A</div>	<div>B</div>	<div><div></div></div>	<div>D</div>
15	<div>A</div>	<div><div></div></div>	<div>C</div>	<div>D</div>

Q. No.	Answer			
16	<div>A</div>	<div>B</div>	<div>C</div>	<div><div></div></div>
17	<div>A</div>	<div><div></div></div>	<div>C</div>	<div>D</div>
18	<div>A</div>	<div>B</div>	<div><div></div></div>	<div>D</div>
19	<div>A</div>	<div>B</div>	<div>C</div>	<div><div></div></div>
20	<div>A</div>	<div>B</div>	<div>C</div>	<div><div></div></div>
21	<div>A</div>	<div>B</div>	<div>C</div>	<div><div></div></div>
22	<div>A</div>	<div>B</div>	<div>C</div>	<div><div></div></div>
23	<div>A</div>	<div><div></div></div>	<div>C</div>	<div>D</div>
24	<div><div></div></div>	<div>B</div>	<div>C</div>	<div>D</div>
25	<div>A</div>	<div><div></div></div>	<div>C</div>	<div>D</div>
26	<div>A</div>	<div>B</div>	<div><div></div></div>	<div>D</div>
27	<div>A</div>	<div>B</div>	<div>C</div>	<div><div></div></div>
28	<div><div></div></div>	<div>B</div>	<div>C</div>	<div>D</div>
29	<div>A</div>	<div><div></div></div>	<div>C</div>	<div>D</div>
30	<div><div></div></div>	<div>B</div>	<div>C</div>	<div>D</div>



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