



**FAMOUS STUDENTS PLATFORM**

**2023**

**FSP MATHEMATICS CONTEST**

**QUESTION BOOKLET**

**GRADE 9 & 10**

**TIME ALLOWED : 90 MINS**

**MAXIMUM MARKS : 90**



**FSP**

**VIBRANT YOUNGSTERS COMPETITIONS**



# INSTRUCTIONS

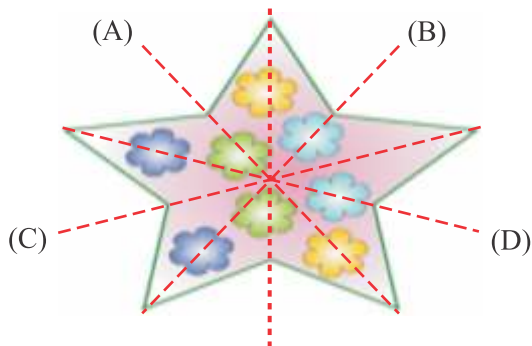
- 1) Don't start attempting the paper until instructed by the invigilator.
- 2) instructions from the examination invigilator must be carried out promptly.
- 3) Carefully recheck your name, father name, school name, address etc at the bubble sheet / answer sheet.
- 4) Record all answers on the bubble 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 5 & 6)
  - C) vibrant youngsters (Grade 7 & 8)
  - D) vibrant youngsters (Grade 9 & 10 / O-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 [www.fspcompetitions.org](http://www.fspcompetitions.org)
- 15) Any academic misconduct or malpractice must be reported to fsp vibrant youngsters at [info@fspcompetitions.org](mailto:info@fspcompetitions.org)

**QUESTION NO : 01**

Salma made this design.



Which line is a line of symmetry of Salma's design?



- (A) A
- (B) B
- (C) C
- (D) D

**QUESTION NO : 02**





In a pre-school class there are 20 children and 5 teachers.

What is the ratio of teachers to children in its simplest form?

- (A) 1:4
- (B) 1:5
- (C) 15:1
- (D) 20:5

QUESTION NO : 03

Huria made a pattern with blocks, as shown.

Stage	Picture
1	
2	
3	
4	

In Stage 2 Huria used a total of five blocks.

How many blocks does Huria need for Stage 5?

- (A) 16
- (B) 17
- (C) 18
- (D) 21

QUESTION : 04

The volume of a cube is  $64 \text{ cm}^3$ .

What is the length of one side of the cube?

- (A) 4 cm
- (B) 8 cm
- (C) 16 cm
- (D) 32 cm

QUESTION NO : 05

Sami starts a number pattern using 3 as his first term.

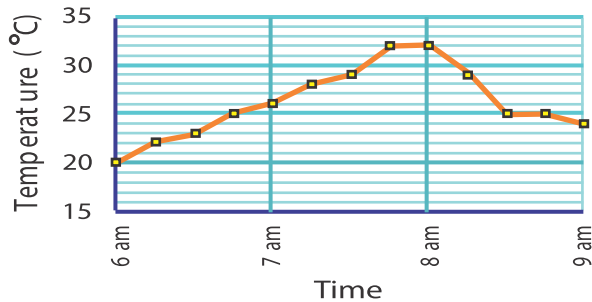
To make any new term in the pattern, Sami squares the previous term and doubles the answer.

What is the third term in Sami's pattern?

- (A) 81
- (B) 324
- (C) 648
- (D) 1296

**QUESTION NO : 06**

Sabeeha records the temperature of a room every 15 minutes from 6 am to 9 am.



During which period did the temperature fall by 3°C?

- (A) 7:30 to 7:45
- (B) 8:00 to 8:15
- (C) 8:15 to 8:30
- (D) 8:45 to 9:00

**QUESTION NO : 07**

An emu laid an egg on 13th July. The egg hatched exactly 6 weeks later.

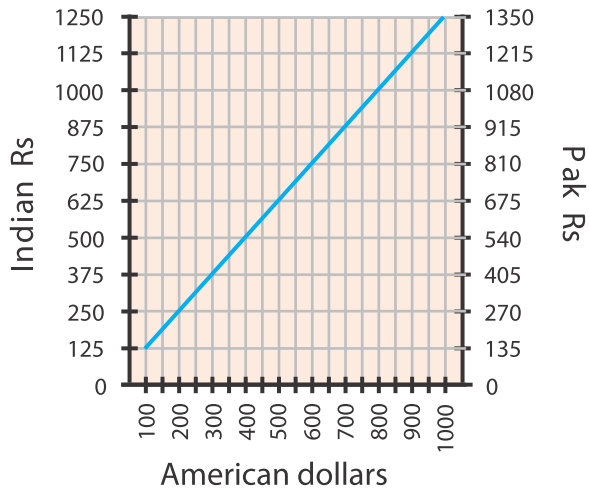


On what date did the egg hatch?

- (A) 1st June
- (B) 2nd June
- (C) 23rd August
- (D) 24th August

**QUESTION NO : 08**

Ahsan used this graph to work out the exchange rates of given currency values.



Ahsan changed 750 Indian Rs into Pak Rs. He spent 270 of these Pak Rs.

How many American dollars did he get for his remaining Pak Rs?

- (A) 400
- (B) 500
- (C) 540
- (D) 810

**QUESTION NO : 09**

The speed of light in space is 299 792 458 metres per second.

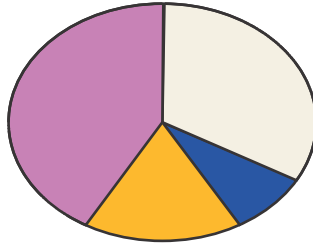


What is half this speed, rounded to the nearest million?

- (A) 149 000 000
- (B) 149 896 229
- (C) 150 000 000
- (D) 300 000 000

**QUESTION NO : 10**

This graph shows how Shahid spent his leisure time on one Saturday.



Key

- Reading
- Computer games
- Television
- Sport

Shahid spent 30 minutes playing computer games.

How many hours did Shahid spend reading?

- (A) 1
- (B) 1.5
- (C) 2
- (D) 4.5

**QUESTION NO : 11**

What is the value of x in this equation?

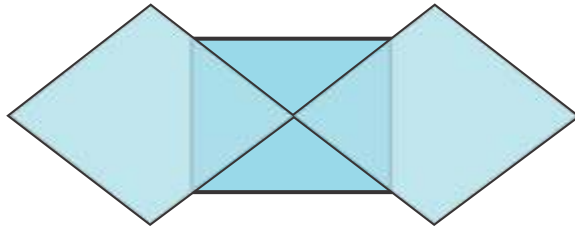
$$5x + 6 = 11 - 2x$$

- (A)  $x = \frac{5}{7}$
- (B)  $x = \frac{7}{5}$
- (C)  $x = \frac{17}{7}$
- (D)  $x = \frac{5}{3}$

- (A) A
- (B) B
- (C) C
- (D) D

**QUESTION NO : 12**

Jameel made this shape using three overlapping squares. Each square had sides 12 cm.



What is the total area, in  $\text{cm}^2$ , of the shape?

- (A) 288
- (B) 300
- (C) 360
- (D) 432

**QUESTION NO : 13**

Ayesha has a vase that is a cube with sides of 10 cm.

She put some liquid in the vase. She tilted the vase so that the liquid covered one face and half of the base of the vase.



Ayesha then tilted the vase back so that the base was horizontal.

What was the height of the liquid in the vase when the base was horizontal?

- (A) 1.25 cm
- (B) 2.5 cm
- (C) 5 cm
- (D) 12.5 cm



**QUESTION NO : 14**

Maria made a triangular prism and cut it into three pieces.



The pieces are all prisms of the same height.

Maria selected the piece with the greatest number of faces.

How many edges does this piece have?

- (A) 5
- (B) 7
- (C) 12
- (D) 15

**QUESTION NO : 15**

Sheraz is 1.5 m tall. One morning he measured his shadow to be 0.5 m. His sister Sharmila's shadow was 0.3 m at the same time and place.

How tall is Sharmila?

- (A) 0.1 m
- (B) 0.9 m
- (C) 1.3 m
- (D) 1.8 m

**QUESTION NO : 16**

Sabhat is going to put a circular pond in her 6 m wide square garden. The diameter of the pond will be the same as the width of the garden.

What area of garden will remain after the pond has been installed, to the nearest  $m^2$ ?

- (A) 8
- (B) 17
- (C) 28
- (D) 77

**QUESTION NO : 17**

There were 600 tickets sold for a school Family Gala function

Bay View School  
**Annual Festival**

Capacity: 600 seats

Tickets	
Adults .....	\$4
Students .....	\$2

**SOLD OUT**

The total amount of the ticket sales was \$1320.

How many student tickets were sold?

- (A) 260
- (B) 350
- (C) 440
- (D) 540

**QUESTION NO : 18**

How many numbers between 301 and 400 are divisible by both 3 and 4?

- (A) 6
- (B) 8
- (C) 12
- (D) 25

**QUESTION NO : 19**

$$2x - 4y - 8x + y = ?$$

- (A)  $10x - 3y$
- (B)  $10x - 5y$
- (C)  $-6x - 5y$
- (D)  $-6x - 3y$

## QUESTION NO : 20

$$F = V^2 - 30V - 4000$$

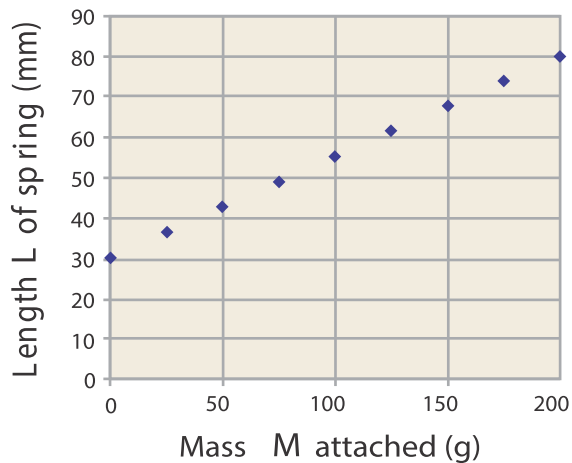
At what positive value of  $V$  does  $F = 0$ ?

- (A)  $V = 10$
- (B)  $V = 40$
- (C)  $V = 50$
- (D)  $V = 80$

## QUESTION NO : 21

Simon hangs different masses from a spring and then measures the length of the spring.

The results for several different masses are shown on this graph.

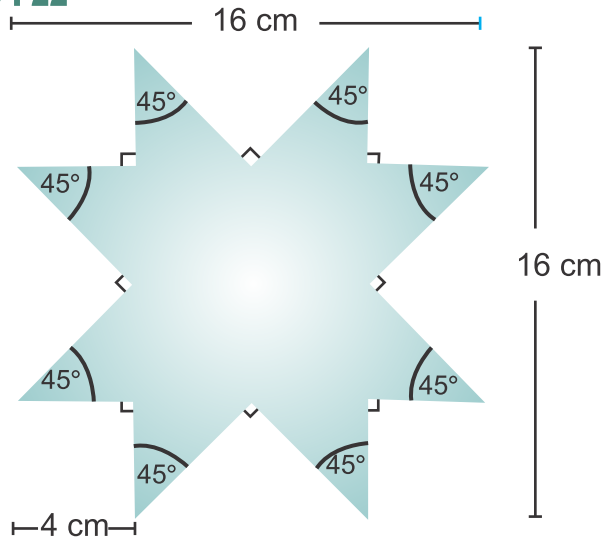


Which of these formulas best describes the relationship between  $L$  and  $M$  as shown in the graph?

- (A)  $L = \frac{1}{4} M + 30$
- (B)  $L = \frac{1}{4} M$
- (C)  $L = \frac{2}{5} M + 30$
- (D)  $L = \frac{2}{5} M$

- (A) A
- (B) B
- (C) C
- (D) D

QUESTION NO : 22



What is the area of this shape?

- (A)  $128 \text{ cm}^2$
- (B)  $160 \text{ cm}^2$
- (C)  $192 \text{ cm}^2$
- (D)  $224 \text{ cm}^2$

QUESTION NO : 23

$$A = \frac{xy}{2}$$

Which of these shows this formula with  $y$  as the subject?

(A)  $y = \frac{2A}{x}$

(B)  $y = \frac{x}{2A}$

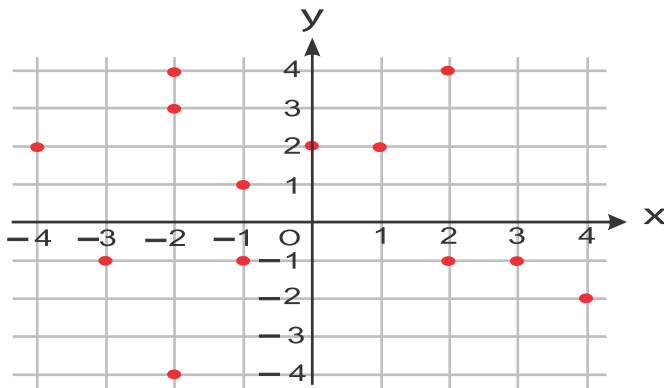
(C)  $y = \frac{2x}{A}$

(D)  $y = \frac{A}{x}$

- (A) A
- (B) B
- (C) C
- (D) D

**QUESTION NO : 24**

Here are fourteen points plotted on the number plane.



Which of these lines passes through the greatest number of points?

- (A)  $y = 2x$
- (B)  $x + y = 2$
- (C)  $y = x + 2$
- (D)  $2y + x = 0$

**QUESTION NO : 25**

The mean maximum temperature for Monday, Tuesday and Wednesday of a particular week was  $30^{\circ}\text{C}$ .

The mean maximum temperature for Tuesday, Wednesday and Thursday of the same week was  $24^{\circ}\text{C}$ .

What was the difference between the maximum temperature on Monday and the maximum temperature on Thursday of this particular week?

- (A)  $3^{\circ}\text{C}$
- (B)  $6^{\circ}\text{C}$
- (C)  $12^{\circ}\text{C}$
- (D)  $18^{\circ}\text{C}$

**QUESTION NO : 26**

Sumbal wrote this formula to work out the total number of litres in 24 soft drink cans.

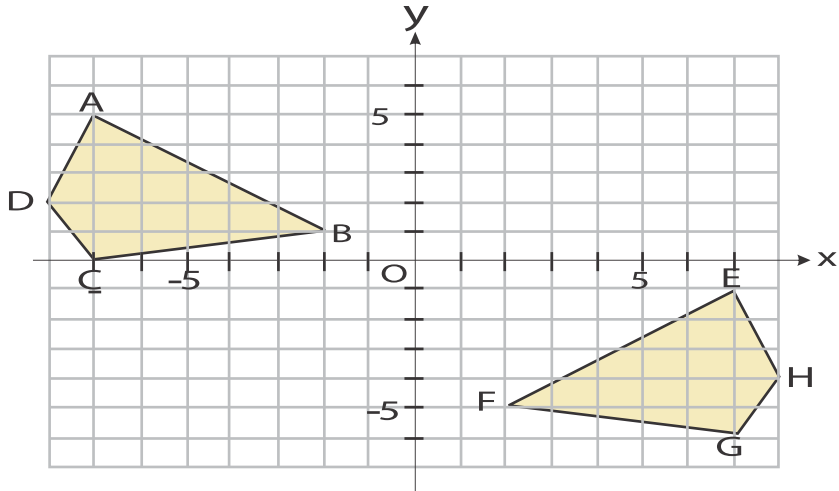
$$24x = y$$

What does  $x$  represent?

- (A) the number of litres in one can
- (B) the number of litres in 24 cans
- (C) the number of soft drink cans
- (D) the number of cans per litre

**QUESTION NO : 27**

Quadrilaterals ABCD and EFGH are congruent.



Which of these pairs of transformations could move ABCD on to EFGH ?

	Reflection in the line	Translation
(A)	$y = 0$	horizontally +10
(B)	$y = 0$	vertically -6
(C)	$x = 0$	vertically -6
(D)	$x = 0$	horizontally +10

- (A) A
- (B) B
- (C) C
- (D) D

**QUESTION NO : 28**

Javed is  $x$  years old. Saira is 5 years older than Javed. Beenish is 3 years older than Saira. The total of the ages of Javed, Saira and Beenish is 40.

Which equation best represents this information?

- (A)  $x + 8 = 40$
- (B)  $x + 13 = 40$
- (C)  $3x + 8 = 40$
- (D)  $3x + 13 = 40$

**QUESTION NO : 29**

Sanawar and Sanober are at opposite ends of an 18 km bush track. They both start walking along the track at the same time and meet after 3 hours.



Sanawar walked at a speed of  $x$  km/h.

Which of these represents the speed, in km/h, at which Sanober walked?

- (A)  $6 - 3x$
- (B)  $6 - x$
- (C)  $18 - 3x$
- (D)  $18 - x$

**QUESTION NO : 30**

Javeria arranged six identical blocks, as shown.



What is the value of  $a$ ?

- (A) 60
- (B) 100
- (C) 120
- (D) 240



# ANSWER SHEET

## GRADE 9 & 10

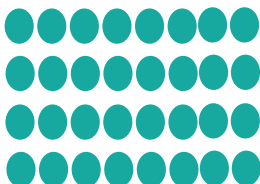


Q.NO ANSWER

- 1    (A) (B) ● (D)
- 2    ● (B) (C) (D)
- 3    (A) ● (C) (D)
- 4    ● (B) (C) (D)
- 5    (A) (B) ● (D)
- 6    (A) ● (C) (D)
- 7    (A) (B) (C) ●
- 8    ● (B) (C) (D)
- 9    (A) (B) ● (D)
- 10   (A) (B) ● (D)
- 11   ● (B) (C) (D)
- 12   (A) (B) ● ○
- 13   (A) ● (C) (D)
- 14   (A) (B) (C) ●
- 15   (A) ● (C) (D)

Q.NO ANSWER

- 16   ● (B) (C) (D)
- 17   (A) (B) (C) ●
- 18   (A) ● (C) (D)
- 19   (A) (B) (C) ●
- 20   (A) (B) (C) ●
- 21   ● (B) (C) (D)
- 22   ● (B) (C) (D)
- 23   ● (B) (C) (D)
- 24   (A) ● (C) (D)
- 25   (A) (B) (C) ●
- 26   ● (B) (C) (D)
- 27   (A) (B) ● (D)
- 28   (A) (B) (C) ●
- 29   (A) ● (C) (D)
- 30   (A) (B) ● (D)



# FSP

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