# BUDHA DAL PUBLIC SCHOOL PATIALA
## FIRST TERM EXAMINATION (2 September 2024)
## MATHEMATICS
## Class – VII
## (Set – A)

**Time Allowed: 3 hours** **Maximum Marks: 80**

**Instructions:**

1. **All questions are compulsory.**
2. **Section – A : Q.No. 1 to 10 in the form of MCQ carry 1 mark each**
3. **Section – B : Q.No. 11 to 20 carry 2 marks each**
4. **Section – C : Q.No. 21 to 30 carry 3 marks each**
5. **Section – D : Q.No. 31 to 35 carry 4 marks each**

**SECTION-A**

1. The coefficient of $x$ in $y^2x - 2y$ is 1

   a) $y^2 - 2y$ b) $-2y$ c) $y^2$ d) 1

2. Integers are not closed under 1

   a) Division b) Subtraction c) Multiplication d) Addition

3. The supplement of the angle measuring $100^0$ is 1

   a) $10^0$ b) $80^0$ c) $100^0$ d) $120^0$

4. Minimum order of rotational symmetry is 1

   a) 3 b) 2 c) 0 d) 1

5. Which of the following is not a 3 – D shape? 1

   a) Cube b) Prism c) Sphere d) Trapezium

6. Two angles $\angle 1$ *and* $\angle 2$ form a linear pair. If we increase the measure of $\angle 1$ then measure of $\angle 2$ will 1

   a) decrease b) increase c) remain unchanged d) become obtuse

7. Find area of parallelogram whose base is 12cm and corresponding height 5cm. 1

   a) 60 $cm^2$ b) 30 $cm^2$ c) none of these

8. When we add a positive integer and a negative integer, the result 1

   a) is always positive b) is always negative c) is zero d) can be positive or negative

9. The reciprocal of a fraction may be a fraction 1

   a) True b) False

10. Product of two integers is positive. If one of them is negative, then other is _____. 1

    a) positive b) negative c) none of these

**SECTION-B**

11. Sushant reads $\frac{1}{3}$ part of a book in 1 hour. How much part of the book will be read in $2\frac{1}{5}$ hours? 2



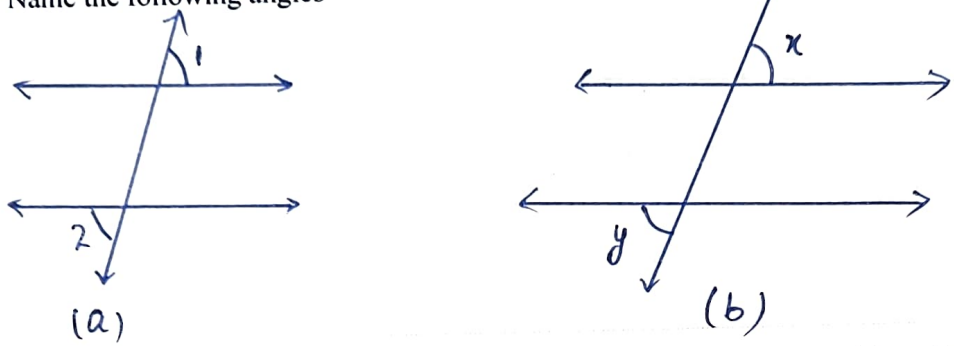
A-1

12. Diameter of circle is 10cm. Find its circumference. $(\pi = 3.14)$ 2

13. What other names can be given to line of symmetry of 2

a) an isosceles triangle b) circle

14. Name the following angles 2




15 In a quiz, team A scored $-40, 10, 0$ and team B scored $10, 0, -40$ in three successive rounds. Which team scored more? Can we say that we can add integers in any order? 2

16. State whether a given pair of terms is of like or unlike terms 2

a) $7x, 7y$ b) $2p^2q, 4qp^2$ c) $2xy, 6yz$ d) $4z^2, 2z^2$

17. A car covers a distance of 89.1km in 2.2 hours. What is average distance covered by it in 1 hour? 2

18. Get the algebraic expressions in following case: 2

a) Sum of numbers a and b subtracted from their product

b) Numbers y and z squared and added

19. Find area of square park whose perimeter is 64m. 2

20. a) Name the figure for the following 2

A triangle with one line of symmetry and rotational symmetry of order 1.

b) Name the quadrilaterals which have both line and rotational symmetry of order more than 1.

c) State number of lines of symmetry for the following

i) A circle ii) A scalene triangle

**SECTION-C**

21. a) Verify the following 3

$18 \times [7 + (-4)] = [18 \times 7] + [18 \times (-4)]$

b) Write down a pair of integers whose difference is $-3$

22. The circumference of a circle is 31.4cm. Find radius and the area of circle? (Take $\pi = 3.14$) 3



A-2

23. a) Sonali plants 9 saplings in a row in her garden. The distance between two adjacent saplings is $\frac{7}{5}m$. Find the distance between the first and last sapling. 3

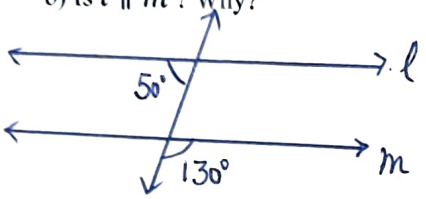
a) Find (i) $5\frac{1}{6} \div \frac{9}{2}$ ii) $\frac{2}{5} \times 5\frac{1}{4}$

24. a) How many times a wheel of radius 28cm must to go 352m? $\left(use\ \pi = \frac{22}{7}\right)$ 3

b) Find height $'x'$ if area of the parallelogram is $24cm^2$ and base is 4cm.

25. a) Find the angle which is equal to its complement 3

b) Is $l \parallel m$ ? Why?




c) Can two angles be supplementary if both of them are right?

26. a) An elevator descends into a mine shaft at rate of 5m/min. If descent starts from 5m above the ground level, how long will it take to reach $-350m$. 3

b) The integer _____ is identity under multiplication.

c) $20 \div \_\_\_ = -2$

27. Find the value of the following expression when $n = 2$ 3

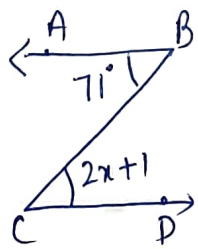
a) $n^3 + 5n^2 + 5n - 2$ b) $5n - 2$

28. a) The number of transversals that can be drawn for two given lines is _____. 3

b) In the given figure $AB \parallel CD$.

Find value of $x$ . in given fig.

Give reasons




29. Fill in the blanks 3

| Shape | Order of Rotation | Angle of Rotation |
|---|---|---|
| a) Equilateral triangle | | |
| b) Regular Hexagon | | |
| c) Semi-Circle | | |

30. a) Give the terms of expressions $3a^2 - 4ab - 7b^2 + 11$ 3

b) Identify the term containing $y$ and give its coefficient $-2y^2 + 7xy - 6x$

c) An expression with one or more terms is called a _____

A-3

## SECTION-D

31. a) In a class test (+5) marks are given for every correct answer and (−2) marks are given for every incorrect answer. Radhika answered all the questions and scored 30 marks through she got 10 correct answers. How many incorrect answers had she attempted? 4

b) Additive inverse of $12 (-1) + 6 \times (-1)$ is _____

c) Determine the integer whose product with $(-1)$ is

(i) $-24$ (ii) 37

32. a) What should be the value of 'a' if the value of $2x^2 + 3x - a$ equals to 5 when $x = 1$ 4

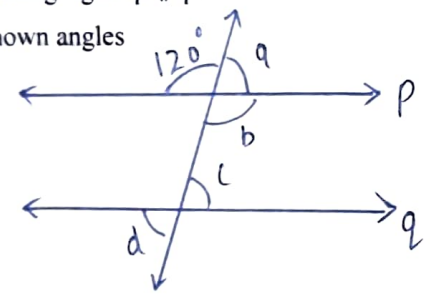
b) A term is product of its _____

c) Identify the following as binomial, trinomial monomial

(i) $1 + 2x - 7y$ (ii) $x^2y + 3y$

33. a) In adjoining figure $p \parallel q$ . 4

Find unknown angles




b) In a pair of supplementary angles, if one angle is _____ other will be acute.

c) Sum of pair of complementary angles is _____

34. In our day to day life activities, we see several objects like books, balls, ice-cream cones etc around us. Which have different shapes. One thing common about most of these objects is that they all have length, breadth and height or depth. That is why, they all occupy space and have three dimension. By similar argument, we can say figures drawn on paper which have only length and breadth called two dimensional shapes or plane figures. 4

On the basis of above information answer the following:

1) Which of the following is plane figure?
   a) Circle b) Cube c) Cone d) Cylinder

2) How many faces does a sphere has
   a) 1 b) 0 c) 2 d) 3

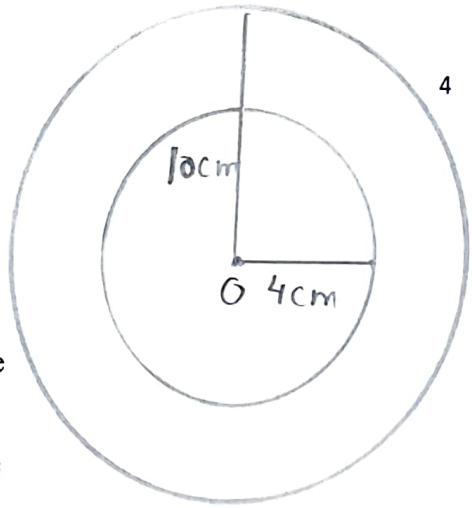
3) If two cubes of dimensions 4cm by 4cm by 4cm are placed side by side. What would be dimensions of resulting cuboid?
   a) Length = 8cm, Breadth = 4cm, Height = 4cm
   b) Length = 4cm, Breadth = 8cm, Height = 4cm
   c) Length = 4cm, Breadth = 4cm, Height = 8cm
   d) None of these

4) How many vertices does a cuboid have
   a) 8 b) 6 c) 12 d) None of these



A-4

35. The adjoining figures shows two circle with same centre. The radius of larger is 10cm and radius of smaller circle is 4cm. ($\pi = 3.14$) 4




On the basis of above information answer the following:

1) What is formula of area of circle?
   a) $\pi^2$ b) $2\pi$ c) $\pi r^2$ d) none of these

2) What is the area of larger circle?
   a) 314 $cm^2$ b) 31.4 $cm^2$ c) none of these

3) What is circumference of circle?
   a) $2\pi r$ b) $\pi r$ c) $2\pi r^2$ d) None of these

4) What is the area of smaller circle?
   a) 50.2 $cm^2$ b) 502.4 $cm^2$ c) 5.024 $cm^2$ d) None of these



A-5

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5. **Section - D : Q.No. 31 to 35 carry 4 marks each**

**SECTION-A**

1. Additive inverse of $12\ (1) + 6 \times (-1)$ is 1

   a) $-18$ b) 18 c) $-6$ d) 6

2. The product of any integer with zero is 1

   a) 1 b) 0 c) $-1$ d) no itself

3. The operation 'of' represents 1

   a) Addition b) Subtraction c) Multiplications d) Division

4. The number of transversals that can be drawn for two given lines is 1

   a) 2 b) infinite c) 4 d) 0

5. Measure of the complement of an angle of 51 is 1

   a) $129^0$ b) $39^0$ c) $41^0$ d) $131^0$

6. What is the area of a circle whose radius is 7cm? 1

   a) 49 $cm^2$ b) 100 $cm^2$ c) 154 $cm^2$ d) 140 $cm^2$

7. The fifth term of a number pattern whose general term $4n - 3$ is 1

   a) 17 b) 13 c) 9 d) 19

8. Which of the following figure can not be cross - sectioned 1

   a) Cube b) Square c) Cuboid d) Sphere

9. Vertical cut of an ice cream cone  1

   a) triangle b) square c) circle d) rectangle

10. The number with expanded form $3 \times 100 + 2 \times 10 + 4 + \frac{8}{100}$ 1

    a) 324.8 b) 324.08 c) 324.8 d) 342.08

**SECTION-B**

11. Put sign $>, <\ or =$ $\quad 23 + 41 - 11 \square - 23 + 41 - 11$ 2



B-1

12. a) Minimum order of rotational symmetry is _____. 2

b) Rotation by _____ is called half rotation.

13. Simplify 2

a) $(-3) \times (-6) \times (0) \times (-1) \times (-5)$ b) $(-221) \div 13$

14. Find : 2

a) $176.1 \times 100$ b) $0.5 \times 0.07$

15 A car covers a distance of 89.1 km in 2.2 hours. What is average distance covered in 1 hr? 2

16. What other names can be given to line of symmetry of 2

a) An isosceles triangle b) Circle

17. Find the area of a square park whose perimeter is 160m. 2

18. Area of a circle is 31.4cm$^2$. Find its circumference $(\pi = 3.14)$ 2

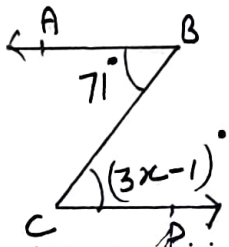
19. Identify the term containing $x$ and give its coefficient $-2y^2 + 7xy - 6$ 2

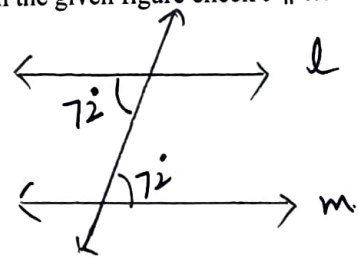
20. a) Only _____ terms can be added or subtracted. 2

b) A term is a product of its _____

**SECTION-C**

21. a) Find the value of $x$ b) In the given figure check $l \parallel m$ 3



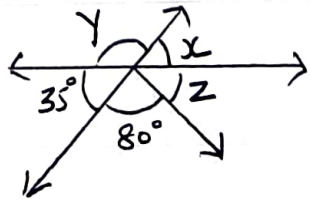

22. In a class test containing 20 questions, 2 marks are given for every correct answer and (– 1) marks are given for every incorrect answer. Sarabjit attempts all questions but only 13 of her answers are correct. What is her total score? 3

23. a) Write the terms and draw factor tree of following expressions: 3

(i) $7x^2 + 5xy - 9$ ii) $-8t^3 + n^2$

Also write whether these expressions are monomial, binomial, trinomial or polynomial.

24. Find the unknown 3






B-2

25. The two sides of the parallelogram ABCD are 6cm and 4cm. The height corresponding to the base CD is 3cm. Find 3

a) Area of a parallelogram

b) The height corresponding to the base AD

26. Find the value of $a^2 + 2ab + b^2$ for $a = 3 \quad b = 2$ 3

27. Lipika reads a book for $1\frac{3}{4}$ hours everyday. She reads the entire book in 6 days. How many hours in all were required by her to read the book? 3

28. a) Write down a pair of integers whose difference is $-5$ 3

b) Verify $18 \times [5 \times (-3)] = [18 \times 5] + [18 \times (-3)]$

29. Sudhanshu divides a circular disc of radius 7cm in two equal parts. What is the perimeter of each semicircular shape disc? $\left(\pi = \frac{22}{7}\right)$ 3

30. What is the order and angle of rotational symmetry of following figures 3

a) Rectangle b) Regular hexagon c) Isosceles triangle

**SECTION-D**

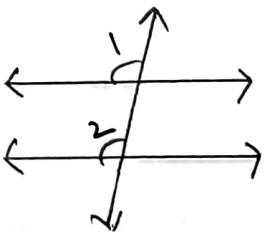
31. Simplify the expression and find its value when $a = 4 \; and \; b = -2$ 4

$2\,(a^2 + ab) + 3 - ab$

32. a) Check if angles with measures $123^0$ and $68^0$ are a pair of supplements of each other. Explain. 4

b) If in a pair of complementary angles both angles are equal then what is the measure of each?

c) $\angle 1 \; and \; \angle 2$ in the given figure form a pair of

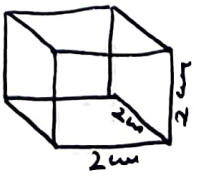



33. At Srinagar, temperature was $-5^0C$ on Monday and then it dropped by $2^0C$ on Tuesday. What was the temperature of Srinagar on Tuesday? On Wednesday it rose by $4^0C$, then what was the temperature on this day? 4

34. Following is the picture of a cube of 2cm by 2cm by 2cm on observing this cube, answer the following questions : 4

1) The number of faces of the given cube has?

a) 5 b) 4 c) 6 d) 3





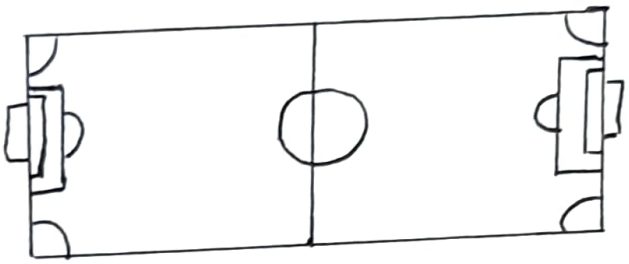

B-3

2) What is the shape of cube from the following?
   a) Match box  b) Rectangular  c) Dice  d) Square

3) If you join this type of two cubes side by side, which dimensions you got for the resulting cuboid.
   a) Length = 4cm, Breadth = 2cm, Height = 2cm
   b) Length = 2cm, Breadth = 4cm, Height = 2cm
   c) Length = 2cm, Breadth = 2cm, Height = 4cm
   d) Length = 4cm, Breadth = 4cm, Height = 2cm

4) After vertical cross reaction of this cube you got which shape
   a) Rectangular  b) Square  c) Triangle  d) Circle

35. Following is the picture (model) of a football ground. On observing this field answer the following questions: 4



1) In this field how many different mathematical shape are there?
   a) 5  b) 4  c) 3  d) 2

2) What is the formula to find the area of this field
   a) $(side)^2$  b) length × breadth  c) 4 × side  d) 2 (l + b)

3) In the centre of this field, a circle is drawn. If diameter of this circle is 14cm, what is its area?
   a) 154 $cm^2$  b) 144 $cm^2$  c) 44 $cm^2$  d) 54 $cm^2$

4) If the radius of this circle is 3.5cm, what will be its circumference?
   a) 44 cm  b) 88 cm  c) 22 cm  d) 33 cm



B-4