B.K. BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
A CBSE DAY-CUM-BOYS' RESIDENTIAL SCHOOL

ANNUAL EXAMINATION (2025-26)
MATHEMATICS
MARKING SCHEME

Class: VI **Set-1** **Time: 3 hrs.**
Date: 21.03.26 **Max Marks: 80**
Admission no: **Roll no:**

Section A

Choose the correct answer **1 x 20 = 20**

1. What is the measure of each angle in a square?
   (a) 45° (b) 60° (c) 90° (d) 120°

2. When drawing a rectangle, which of the following is true about its diagonals?
   (a) They are always parallel. (b) They bisect each other
   (c) They are equal in length. (d) both the option (b) and (c)

3. A simple closed curve all of whose points are at the same distance from a fixed point is _____
   (a) Radius (b) Circle (c) Square (d) Rectangle

4. An angle of exactly 90° is called a _____ angle.
   (a) Straight (b) Obtuse (c) Acute (d) Right

5. In a bar graph, each bar (rectangle) represents only _____ value of the numerical data.
   (a) Four (b)Three (c)Two (d)one

6. A square has rotational symmetry of order _____.
   (a) 3 (b) 2 (c) 4 (d) 6

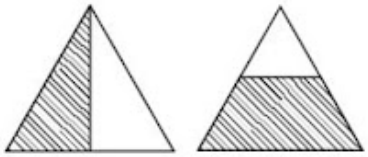
7. If length and breadth of rectangle are doubled then its area will be_____.
   (a) same (b) triple (c) half (d) double

8. The perimeter of a regular hexagon of side 8 cm is_____
   (a) 32 cm (b) 40 cm (c) 48 cm (d) 64 cm

9. The perimeter of a triangle with sides 12 cm, 8 cm, and 7 cm is_____
   (a) 27 cm (b) 54 cm (c) 81 cm (d) 108 cm

10. A number representing a part of a _____is called a fraction.
(a) Whole (b) part (c) fraction (d) all of these

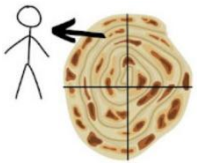
11. Which of the following represents $\frac{1}{2}$?



(a) Only figure (a) (b) Only figure (b)
(c) Both figures (a) and (b) (d) Neither figure (a) nor figure (b)

12. A rectangle has _____lines of symmetry.
(a) 3 (b) 2 (c) 4 (d) 6

13. When 4 children share 1 roti equally, each child gets _____ roti.



(a) ¼ (b) ½ (c) $^1/_3$ (d) 1

14. In which of the following pairs of integers, the first integer is not on the left of the other integer on the number line?
(a) (-1, 10) (b) (- 3, -5) (c) (- 5,-3) (d) (- 6, 0)

15. If you move 7 steps to the left from +2 on a number line, where will you end up?
(a) -5 (b) 5 (c) 9 (d) – 9

16. The integer – 2 lies _____
(a) to the left of – 3 (b) to the right of – 1
(c) to the left of – 1 (d) between – 1 and 0

17. How many lines of symmetry does a regular hexagon have?
(a) 4 (b) 6 (c) 8 (d) 2

18. Which of the following shows the maximum rise in temperature?
(a) 0°C to 10°C (b) – 4°C to 8°C
(c) -15°C to – 8°C (d) -7°C to 0°

19. Assertion (A) : A square can be thought of as a special rectangle.
Reason (R) : A rectangle with all sides equal becomes a square.
(a) Both A and R are true, and R is the correct explanation of A.
(b) Both A and R are true, but R is not the correct explanation of A.
(c) A is true, but R is false.
(d) A is false, but R is true.

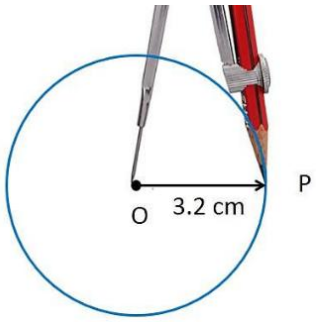
20. Assertion (A) : (+ 1) + (+ 2) = 3
Reason (R) : The addition is taking two or more than two numbers and adding
(a) Both A and R are true, and R is the correct explanation of A.
(b) Both A and R are true, but R is not the correct explanation of A.
(c) A is true, but R is false.

(d) A is false, but R is true.

Section B

Do as directed **2 x 5 =10**

21. Draw a circle of radius 3.2 cm.



22. Shabana wants to put a lace border all around a rectangular table cover 3 m long and 2 m wide. Find the length of the lace required by Shabana.

Solution:

Length (l) = 3 m Breadth (b) = 2 m

Perimeter of rectangle = 2 (l + b)

= 2 (3 + 2)

= 2 (5)

= 10 m

or

A rectangular garden has a length of 8 m and a breadth of 5 m. Find the area of the garden

Solution: 8 Breadth (b) = 5m

Area of rectangle = l x b

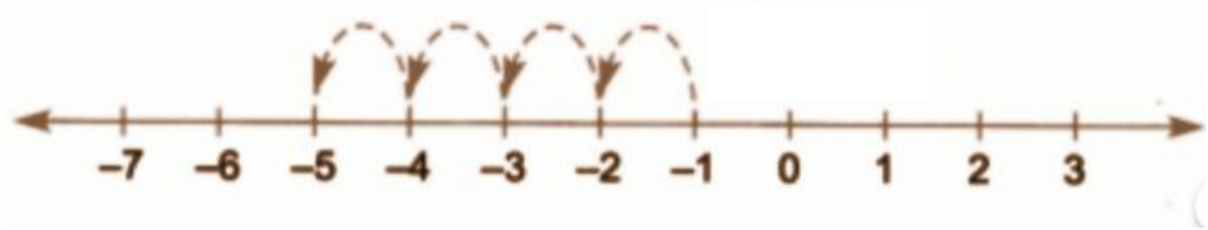
= 8 x 5

= 40 m^2

23. Locate the integer on the number line that is:

(a) (-1) – 4

(b) (-2) + 5



24. Compare the following fractions and justify your answers:

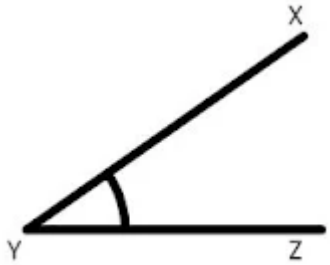
(a) $\frac{7}{4}$ < $\frac{7}{3}$ (b) $\frac{9}{11}$ > $\frac{5}{11}$

or

Find 4 equivalent fraction to $\frac{3}{5}$

Solution:
4 equivalents to 3/5 are:
6/10, 9/15, 12/20, 15/25, and 18/30

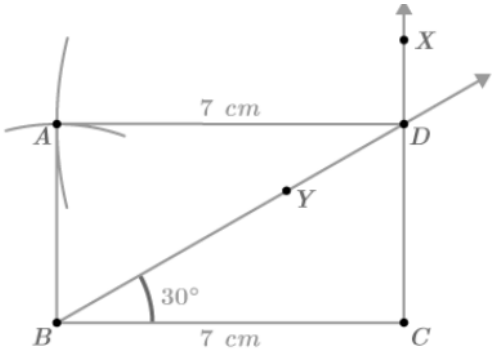
25. Draw an acute angle and label it as ∠XYZ.



Section C

Solve the following **3 x 6 = 18**

26. Construct a rectangle with sides 5 cm and 7 cm. Verify if the diagonals are equal.



27. Suppose you start with `0 in your bank account, and then you have debits of ₹ 1, 2, 4, 8, 16, 32, 64, and 128, and then a single credit of ₹ 256. What is your bank account balance now?

Solution:

Given

Debits = ₹ 1 + ₹ 2 + ₹ 4 + ₹ 8 + ₹ 16 + ₹ 32 + ₹ 64 + ₹ 128 = ₹ 255

Credit = ₹ 256

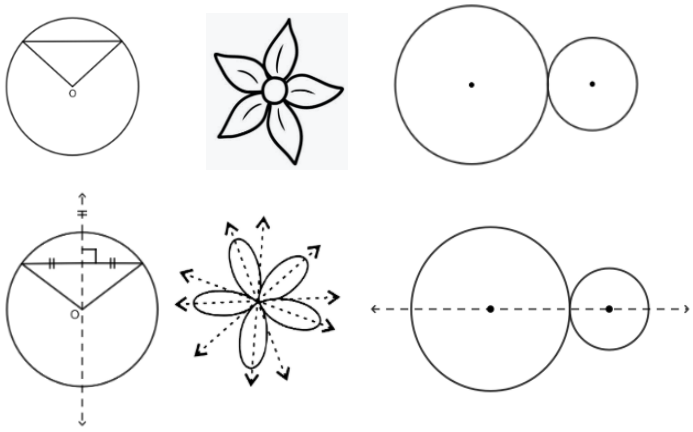
Therefore, Balance = Credits - Debits

= ₹ 256 - ₹ 255

= ₹ 1

Hence, your bank account balance is ₹ 1.

28. Draw the line (s) of symmetry for each of the following figures



29. Reduce to the simplest form:

$\frac{150}{60}$ $\frac{36}{72}$ $\frac{5}{25}$

Solution:

(a) Divide both the numerator and denominator by 30:

150/60 = 150 ÷ 30 / 60 ÷ 30 = 5/2.

The simplest form of 150/60 is 5/2.

(b) Divide both the numerator and denominator by 36:

36/72 = 36 ÷ 36 / 72 ÷ 36 = 1/2.

The simplest form of 36/72 is 1/2.

(c) Divide both the numerator and denominator by 5:

51/25 = 5 ÷ 51 / 25 ÷ 5 = 125.

The simplest form of 51/25 is 1/25.

or

Riya ate $\frac{3}{8}$ of a chocolate and her brother ate $\frac{2}{3}$ of the same chocolate.

How much chocolate did they eat in total?

Solution:

LCM is 8 x 3 = 24

$\frac{3}{8} = \frac{3 \times 3}{8 \times 3} = \frac{9}{24}$

$\frac{2}{3} = \frac{2 \times 8}{3 \times 8} = \frac{16}{24}$

$\frac{9}{24} + \frac{16}{24} = \frac{25}{24} = 1\frac{1}{24}$

30. A farmer owns a fruit/flower yard and the pictograph shows different kinds of fruit trees in his fruit yard. Observe the pictograph and answer the following questions:

(a) Which fruit tree is maximum in number at the fruit yard?

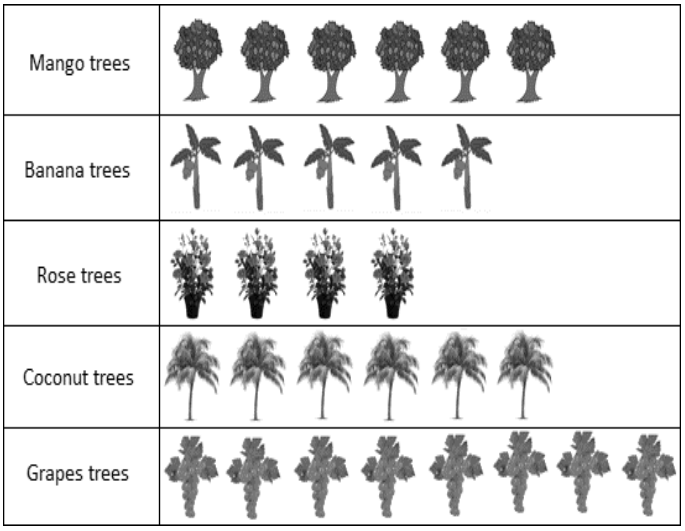
Coconut trees

(b) How many more coconut trees are there than rose trees?

6 – 4 = 2

(c) How many different varieties of trees are available at the yard?

5



31. A rectangular room has dimensions 5 meters by 3 meters. Square tiles with a side length of 50 centimetres are to be used to pave the entire floor.

(a) Determine the number of tiles required to cover the floor completely.

(b) Calculate the total cost of tiling if each tile costs ₹395.

Solution:

(a) Area of rectangle = length x breadth

Calculate the area of one tile by multiplying the side lengths.

50cm x 50cm = 2500 cm^2

1 m = 100 cm

5m = 5 x 100 = 500 cm 3m = 3 x 100 = 300 cm

Calculate the area of the floor by multiplying the length by the width.

500 x 300 = 150000 cm^2

The number of tiles needed by dividing the floor area by the tile area.

1,50,000 cm^2 / 2500 cm^2 = 60

Therefore, 60 tiles of sides 50cm by 50cm are needed to cover a square toilet floor 5m by 3m.

(b) Cost of tiling each tile = ₹395

Total cost = 60 x 395 = ₹ 23, 700

or

Perimeter of a square and a rectangle is same. If a side of the square is 15 cm and one side of the rectangle is 18cm, find the area of the rectangle.

Solution:
Perimeter of the square =4× (length of the side)
=(4×15)cm=60 cm
Let the breadth of the rectangle be x cm.
Perimeter of the rectangle =2(18+x)cm
As, Perimeters of a square and a rectangular are the same.
⇒2(18+x)=60
⇒18+x=30
⇒x=12 cm
Area of rectangle =l x b
=x(18)
=12(18)
=216
Hence Area of rectangle is 216 cm^2.

Section D

Do as directed **5 x 4 = 20**

32. Complete the grid to make the required border sums:

6	8	
		−5
	−2	

Border sum is −2

or

A school has steps. A girl is sitting on the topmost step (which is the first step). The girl is present at the tenth step. She jumps three steps down the stairs and then successively jumps back two steps upwards. In how many jumps will the girl reach the ground?

Solution:
The girl is on the 10th step (top step).
Ground is step 0.
Each time she:
Jumps 3 steps down
Then jumps 2 steps up
So, in one complete set of two jumps, she moves:
3 steps down − 2 steps up = 1 step down
Step-by-step movement:
Start at 10
1.Down 3 → 7
2. Up 2 → 9
3. Down 3 → 6
4. Up 2 → 8
5. Down 3 → 5
6. Up 2 → 7

7. Down 3 → 4
8. Up 2 → 6
9. Down 3 → 3
10. Up 2 → 5
11. Down 3 → 2
12. Up 2 → 4
13. Down 3 → 1
14. Up 2 → 3
15. Down 3 → 0 (reaches ground)

Total : 15 jumps

33. Construction:

Draw a perpendicular line from the midpoint of line segment of 6 cm
Name the angle formed between the two-line segments?

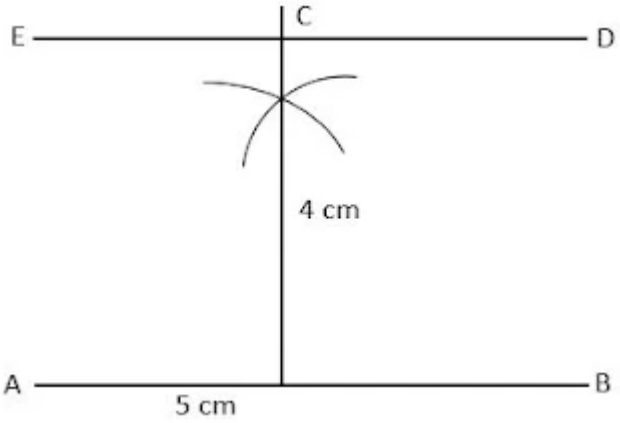
or

Can we construct parallel lines using rounder prove it. Name the angle formed between the two-line segments?

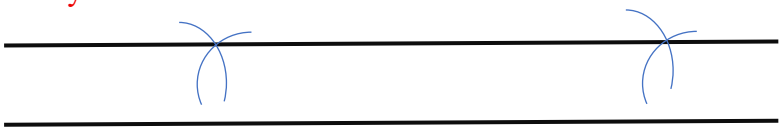
Solution:

Right angle (90°)

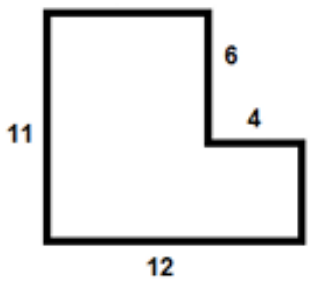
A perpendicular line forms a right angle with the original line segment.

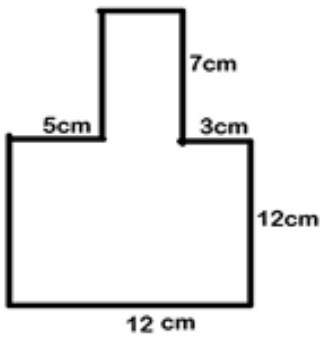


The angle directly between two parallel lines is 0∘
, as they never meet



34. Find the area of the following irregular shapes.

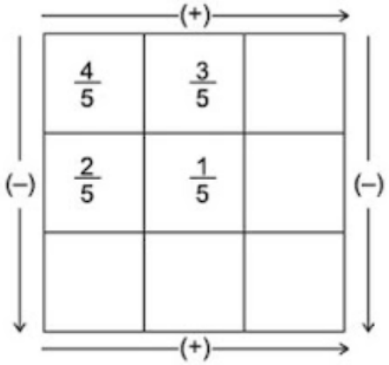




Solution:
Observe that it is an L-shape.
We can divide it into:
A big rectangle: 12 × 11
Minus the small missing rectangle: 4 × 6
Step 1: Area of big rectangle
= 12 × 11
= 132 sq. units
Step 2: Area of small cut-out rectangle
= 4 × 6
= 24 sq. units
Step 3: Required Area
= 132 − 24
= 108 square units
Area of first shape = 108 sq. units

This shape can be divided into:
Bottom rectangle → 12 × 12
Top small rectangle
First find width of the top rectangle:
Total bottom width = 12 cm
Left top part = 5 cm
Right top part = 3 cm
Middle width = 12 − 5 − 3
= 4 cm
Height of top rectangle = 7 cm
Step 1: Area of bottom rectangle
= 12 × 12
= 144 sq. cm
Step 2: Area of top rectangle
= 4 × 7
= 28 sq. cm
Step 3: Total Area
= 144 + 28
= 172 sq. cm

35. Complete the addition subtraction box.

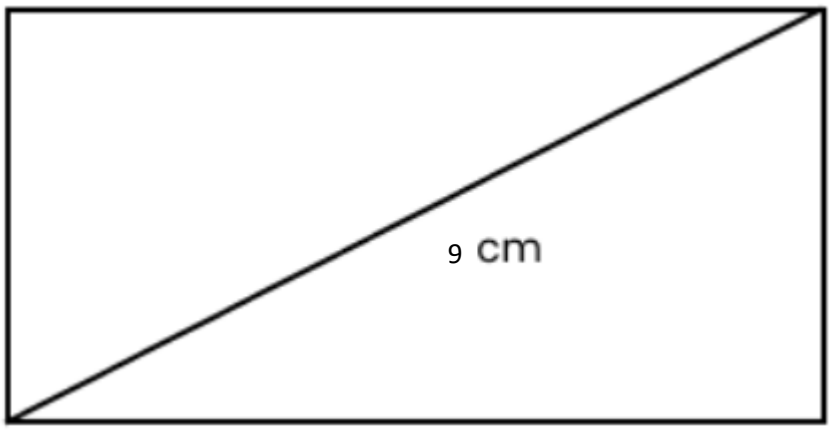


$\frac{4}{5}$	$\frac{3}{5}$	$\frac{7}{5}=1\frac{2}{5}$
$\frac{2}{5}$	$\frac{1}{5}$	$\frac{3}{5}$
$\frac{2}{5}$	$\frac{2}{5}$	$\frac{4}{5}$

Section E

Solve the following **4 x 3 = 12**

36. A boy is learning geometrical constructions in class and is asked to construct a rectangle using a ruler and compass. The given information is as follows: One side of the rectangle measures 6 cm. The length of the diagonal of the rectangle is 9 cm.
The boy carefully follows the steps of construction to draw the required rectangle. Help the boy for the construction



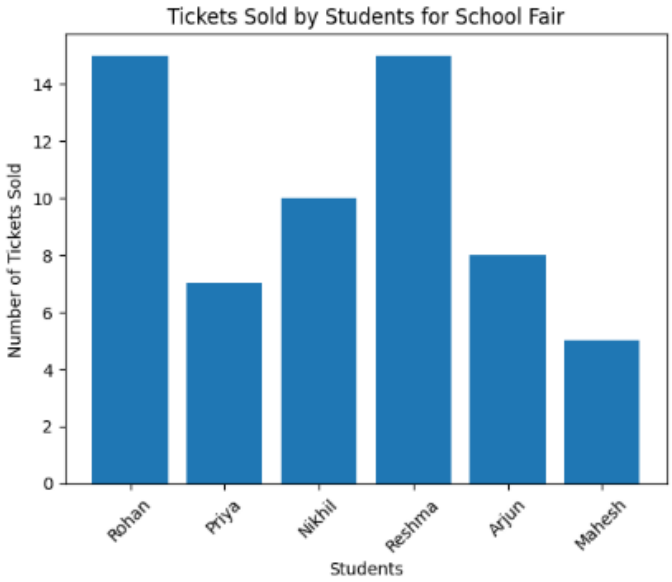
Solution:
Given:
One side = 6 cm
Diagonal = 9 cm
We construct the rectangle using ruler and compass.
Steps of Construction:
Draw a line segment AB = 6 cm.
(This is one side of the rectangle.)
At point A, construct a perpendicular to AB using a compass.
With centre A and radius 9 cm, draw an arc cutting the perpendicu[illegible]
point D.
(AD = 9 cm is taken as the diagonal.)
Join B and D.
Through point B, draw a line parallel to AD.
Through point D, draw a line parallel to AB.
Let these two lines meet at point C.
Join BC and CD to complete rectangle ABCD.

37. Five students of class VI sold tickets of the school fair:

Name	Rohan	Priya	Nikhil	Reshma	Arjun	Mahesh
No. of tickets sold	15	7	10	15	8	5

Draw a bar graph to represent the given information.

Solution:



38. Radha and her three cousins visited a fair. They bought a large rectangular chikki and decided to share it equally. The shopkeeper cut the chikki into 12 equal parts, similar to the chikki division. Radha ate 3 parts, while each cousin ate 2 parts. After eating, they compared how much each one had eaten and tried converting their shares into fractional units. Radha wanted to know if she ate more than each cousin and if her share could be written in lowest terms. They also wanted to show their shares on a number line. Subtract the following fraction. Can you express the result as a mixed fraction? Why

Based on the above, answer the following questions

(a) Fraction of chikki Radha ate.

(b) Fraction each cousin ate.

(c) Who ate more?

(d) Express Radha's fraction in lowest terms and mark on a number line.

Solution:

Given:

Total chikki pieces = 12

Radha ate = 3 pieces

Each cousin ate = 2 pieces

(a) Fraction of chikki Radha ate

3/12

(b) Fraction each cousin ate
2/12
(c) Who ate more?
Compare:
Radha → 3/12
Cousin → 2/12
Since 3/12 > 2/12,
Radha ate more than each cousin
(d) Express Radha's fraction in lowest terms
3/12
Divide numerator and denominator by 3:
3÷3/12÷3=1/4
Lowest form = 1/4