PM SHRI KENDRIYA VIDYALAYA-DHARMAPURI

AUTUMN HOLIDAY ASSIGNMENT

CLASS-VI

SUBJECT: MATHEMATICS

I. Word Problems

1. A number plate shows the number ABBA. If A = 2 and B = 5, what is the palindromic number?
2. Ramesh thinks of a palindromic number between 300 and 400. The tens digit is 4. What number is he thinking of?
3. The sum of two palindromes is also a palindrome. Give one such example with 2-digit numbers.

II. Activity

Make a palindrome wall chart with at least 10 palindromic numbers from 2-digit to 6-digit.

Write a short note: “Why palindromes are special in Mathematics.”

PM SHRI KENDRIYA VIDYALAYA-DHARMAPURI

AUTUMN HOLIDAY ASSIGNMENT

CLASS-VII

SUBJECT: MATHEMATICS

I. Word Problems

1.The cost of 1 pencil is ₹5. Write an expression for the cost of:

(a) 10 pencils

(b) n pencils

2.A taxi charges ₹50 as a fixed charge and ₹12 per km. Write an expression for the total cost if distance travelled is X km.

3.A rectangle has length (2x+3) cm and breadth (x+1) cm. Write expressions for its:

Perimeter, Area

II. Fun Activity

Make a colourful Arithmetic Expression Tree 🌳. Start with numbers at the bottom (like 2, 3, 5).

Combine them with +, –, ×, ÷ in branches. Write the final simplified value at the top.

PM SHRI KENDRIYA VIDYALAYA-DHARMAPURI

AUTUMN HOLIDAY ASSIGNMENT

CLASS-VIII

SUBJECT: MATHEMATICS

I. Word Problems

1.The sum of two consecutive integers is 75. Find the numbers.

2.The perimeter of a rectangle is 60 cm. If its length is twice its breadth, find length and breadth using algebra.

3.A father's age is 3 times his son's age. After 10 years, the father's age will be twice the son's age. Find their present ages.

4.A number is such that twice it plus 7 equals 25. Find the number.

II. Project Work

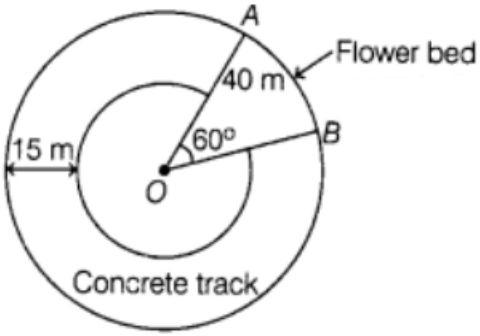
Make a Maths Chart / Poster on the theme "Algebra in Daily Life".

Collect examples from shopping, construction, travel, or sports.

Represent each example as an algebraic expression or equation.

PM SHRI KENDRIYA VIDYALAYA DHARMAPURI 636 704
AUTUMN BREAK HOMEWORK(2025-26)
Class:10th (Mathematics-041)

1. A regular morning walk, schedule can help you to reduce weight. You can take care of many health problems concerning your heart, joints, mental health, lung capacity, immune system and body strength just by walking. To improve the health two friends Vicky and Love went to the walk on concrete track. (Shown in figure). In the figure, AOB is a flower bed in the shape of a sector of a circle of radius 40 m and ∠AOB = 60°. Also, a 15 m wide concrete track is made as shown in the figure.



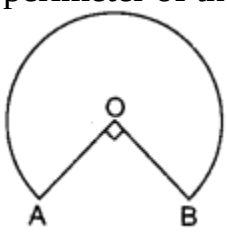
On the basis of above information, answer the following questions.

(i) Find the radius of inner circle.
(ii) Find the area of inner sector.
(iii) Find the area of the sector AOB.

(Or)

If instead of flower bed there had been a complete circular concrete track, then find the area of the concrete region.

2. If the difference between the circumference and the radius of a circle is 37 cm, then using π = 22/7, calculate the circumference (in cm) of the circle.
3. In the given figure, the shape of the top of a table is that a sector of a circle with centre O and ∠AOB = 90°. If AO = OB = 42 cm, then find the perimeter of the top of the table



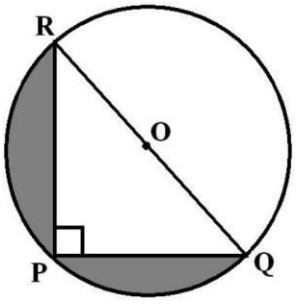
4. If the diameter of a semicircular protractor is 14 cm, then find its perimeter.

5. If HCF(18, 48) = 6, find LCM(18, 48).
6. Find a quadratic polynomial whose zeroes are 5 and –3.
7. Find the condition on k such that the pair of equations $2x + 3y = 4$ and $4x + ky = 8$ has infinitely many solutions.
8. If the zeroes of the polynomial $f(x) = 2x^2 – 5x + 3$ are α and β, find the value of $\alpha^2 + \beta^2$.
9. Show that $\sqrt{5}$ is irrational.
10. Show that $2\sqrt{3} + 5$ is irrational.

11. The sum of the digits of a two-digit number is 9. If the digits are reversed, the new number is 27 more than the original number. Find the number.
12. Find the zeroes of the polynomial $x^2 – 6x + 8$ and verify the relation between the zeroes and coefficients.
13. A student scored full marks in all questions he attempted. He attempted 20 questions and left some unattempted. For every unattempted question, he was penalized 0.5 marks. He got a total of 18 marks.
    (i) Represent this as an equation.
    (ii) How many questions did he leave?
    (iii) What would be his marks if he left 4 questions unattempted?
    (iv) How many questions should he leave to get 17 marks?
14. The product of two consecutive positive integers is 72.
    (i) Represent this situation algebraically.
    (ii) Solve the quadratic equation.
    (iii) Find the two numbers.
    (iv) Find the value(s) of k for which the equation $x^2 + 4kx + 16 = 0$ has real and equal roots.
15. What is the value of $(3 + \sqrt{2})(3 - \sqrt{2})$?
16. Assertion: $\sqrt{7}$ is irrational.
    Reason: Square root of any prime number is irrational.
17. Find the value of k such that $3x – y = 1$ and $6x – ky = 2$ has infinitely many solutions.
18. If the zeroes of $x^2 + 4x + 3$ are α and β, find $\alpha + \beta$ and $\alpha\beta$.
19. The sum of a number and its reciprocal is $\frac{5}{2}$. Find the number.

20. Find the zeroes of the polynomial $x^2 - 2x - 8$ and verify the relationship between zeroes and coefficients.
21. A student attempted some questions correctly and left the rest. He scores 80% marks. Each correct answer gives 2 marks. Total questions = 50.
    (i) Form the equation.
    (ii) How many questions did he attempt?
    (iii) How many marks did he lose?
    (iv) Find how many he attempted if he scored 90%.
22. The product of ages of father and son is 900. If the father is 10 years older than 3 times his son, find their ages.
    (i) Represent algebraically.
    (ii) Form quadratic equation.
    (iii) Solve it.
    (iv) Find k if $x^2 - 2kx + k^2 = 0$ has one solution.

23. A boat covers 14 kms in upstream and 20 kms downstream in 7 hours. Also, it covers 22 kms upstream and 34 kms downstream in 10 hours. Find the speed of the boat in still water and that of the stream.
24. Solve the equation: $1 + 4 + 7 + 10 + ... + x = 287$
25. the vertices of the triangle, the midpoints of whose sides are (3,1), (5,6) and (-3,2).
26. Find the height of a chimney, when it is found that on walking towards it 50 m in a horizontal line through its base, the angular elevation of its top changes from 30^0 to 45^0.
27. A bird is sitting on the top of a tree which is 80m high. The angle of elevation of the bird, from a point on the ground is 45^0.The bird flies away from the point of observation horizontally and remains at a constant height. After 2 seconds, the angle of elevation of the bird becomes 30^0.Find the speed of the flying bird.
28. Find the area of the shaded region in figure , if RP= 24 cm and PQ = 10 cm and O is the centre of circle.(take $\pi = 3.14$)



PM SHRI KENDRIYA VIDYALAYA DHARMAPURI 636 704
AUTUMN BREAK HOMEWORK(2025-26)
Class:9th (Mathematics-041)

1. Find six rational numbers between $\frac{3}{5}$ and $\frac{4}{5}$.
2. Find five rational numbers between $\frac{2}{5}$ and $\frac{5}{8}$.
3. Locate $\sqrt{7}$ on the number line.
4. Locate $\sqrt{8.6}$ on the number line.
5. Find the decimal expansions of $\frac{10}{3}$, $\frac{7}{8}$ and $\frac{2}{7}$.
6. Find four different irrational numbers between the rational numbers $\frac{2}{5}$ and $\frac{7}{4}$.
7. Subtract: $4\sqrt{2}+ 6\sqrt{5}$ from $3\sqrt{20} – 3\sqrt{2}$.
8. Rationalise the denominator of
   i) $\frac{1}{7+3\sqrt{3}}$.
   ii) $\frac{1}{4-2\sqrt{2}}$.
9. Express 1.234343434…… in the form $\frac{p}{q}$.
10. Express 1.234343434…… in the form $\frac{p}{q}$.
11. Find p(0), p(1) and p(2) for each of the following polynomials:
    i) $p(x) = 5x^2 – x + 10$
    ii) $p(y) = y^2 + 7y + 11$
12. Factorise:
    i) $2x^3 – 5x^2 + x + 2$
    ii) $3x^2 – 7x – 6$
13. Expand each of the following using suitable identities:
    i) $(\mathbf{2y - 4z})^{\mathbf{3}}$
    ii) $(\mathbf{-2x + 5y - 3z})^{\mathbf{2}}$
14. Factorise: $25x^2 + 9y^2 + 16z^2 + 30xy – 24yz – 40xz$
15. Find the value of k, if $\mathbf{x = -3}$, y = $\mathbf{\frac{1}{2}}$ is a solution of the equation $\mathbf{5x - 4y + k = 0}$.
16. If a point C lies between two points A and B such that AC = BC, then prove that AC = $\mathbf{\frac{1}{2}}$ AB. Explain by drawing the figure.

17. In Fig. 6.17, POQ is a line. Ray OR is perpendicular to line PQ. OS is another ray lying between rays OP and OR. Prove that $\angle ROS = \frac{1}{2}(\angle QOS - \angle POS)$.

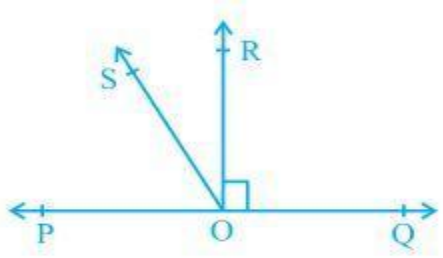
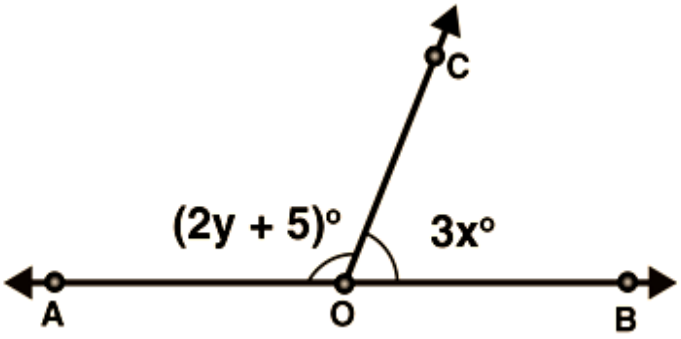


Fig. 6.17

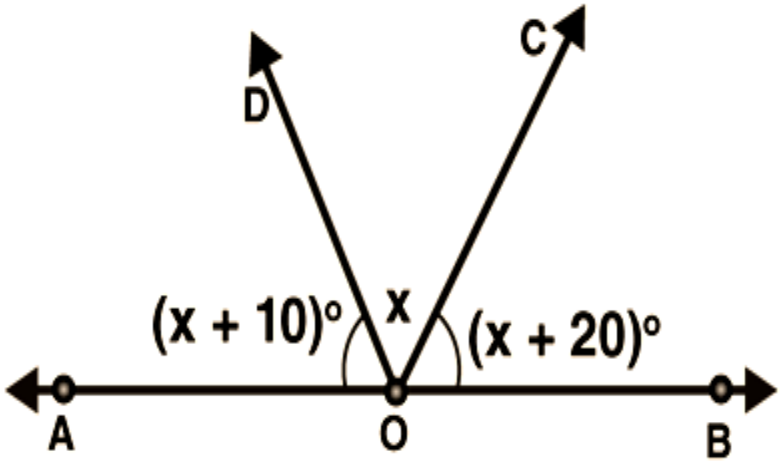
18. It is given that $\angle PQR = 72°$ and PQ is produced to point S. Draw a figure from the given information. If ray QT bisects ∠, find ∠RQT, ∠PQT and reflex ∠SQT.

19. In the below Fig. OA and OB are opposite rays:

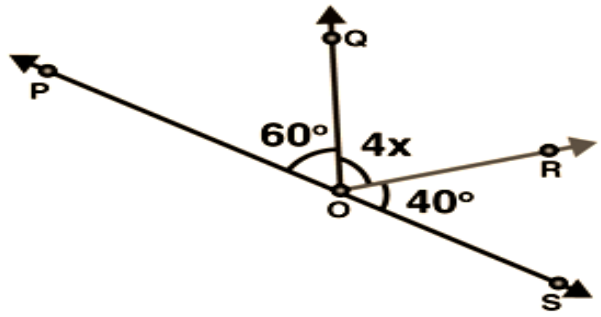
i) If $x = 25^0$, what is the value of y?
ii) If $y = 35^0$, what is the value of x?



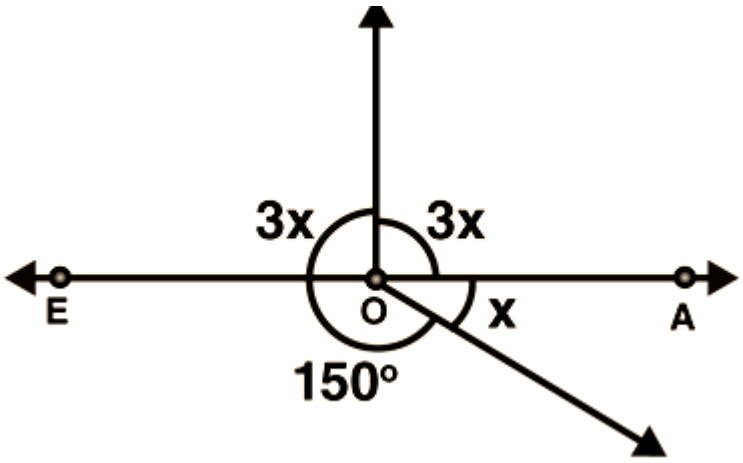
20. In the given figure, find x. Further find ∠BOC , ∠COD and ∠AOD.



21. In figure, POS is a line, find x.



22. In figure, determine the value of x.



23. In figure, AOC is a line, find x.

