

KENDRIYA VIDYALAYA AIR FORCE STATION BARNALA
SAMPLE PAPER 01 : PERIODIC TEST – 1 (2017 – 18)
CLASS – IX
MATHEMATICS

T.T. 1:30

M.M. 40

General Instructions:

1. All questions are compulsory.
 2. Question paper is divided into four sections: Section A contains 4 questions each carry 1 mark, Section B contains 4 questions each carry 2 marks, Section C contains 4 questions each carry 3 marks and Section D contains 4 questions each carry 4 marks.
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SECTION – A

1. Rationalize the denominator of $\frac{3 - \sqrt{2}}{3 + \sqrt{2}}$.
2. One of the angles of a triangle is 50° and the other two angles are equal. Find the measure of each of the equal angles.
3. If $x + 6$ is a factor of $p(x) = x^3 + 3x^2 + 4x + k$, find the value of k .
4. Find the value of k , if $x = 2, y = 1$ is a solution of the equation $2x + 3y = k$.

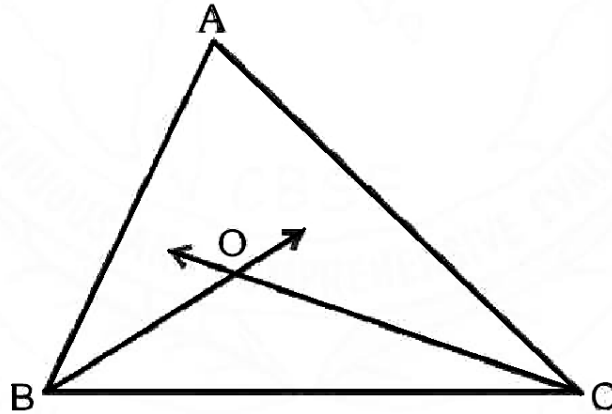
SECTION – B

5. Show that $1.272727\dots\dots$ can be expressed in the form of $\frac{p}{q}$, where p and q are integers and $q \neq 0$.
6. If a and b are rational numbers and $\frac{7 - 4\sqrt{3}}{7 + 4\sqrt{3}} = a + b\sqrt{3}$, find the values of a and b .
7. Factorise: $x^3 - 3x^2 - 9x - 5$
8. If a point C lies between two points A and B such that $AC = BC$, then prove that $AC = \frac{1}{2}AB$. Explain by drawing the figure.

SECTION – C

9. Represent the real number $\sqrt{2}, \sqrt{3}, \sqrt{5}$ on a single number line.
 10. The Autorikshaw fare in a city is charged Rs 10 for the first kilometer and @ Rs 4 per kilometer for subsequent distance covered. Write the linear equation to express the above statement. Draw the graph of the linear equation.
 11. Write all five postulates of Euclid's. Explain with diagram.
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12. Bisectors of angles B and C of a triangle ABC intersect each other at the point O (see below figure). Prove that $\angle BOC = 90^\circ + \frac{1}{2} \angle A$.



SECTION – D

13. Prove that “The sum of all interior angles of a triangle is 180° ”. If the angles of a triangle are in the ratio 2 : 3 : 4, find the angles of the triangle.
14. The polynomial $f(x) = x^4 - 2x^3 + 3x^2 - ax + b$ when divided by $(x - 1)$ and $(x + 1)$ leaves the remainders 5 and 19 respectively. Find the values of a and b . Hence, find the remainder when $f(x)$ is divided by $(x - 3)$.
15. Plot the following points on a graph paper:

x	1	2	3	4	5
y	5	8	11	14	17

Join these points. What do you observe?

16. Solve the equation $2x + 1 = x - 3$, and represent the solution(s) on
 (i) the number line,
 (ii) the Cartesian plane.

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