

Periodic Test (2) 2019-20

Class-X

Sub: Maths.

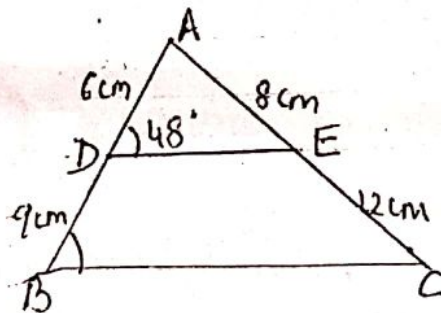
Time: 2.30 hrs.

M.M: 80

Section-A

(1×4=4)

1. What is the common difference of an A.P. in which $a_{21} - a_7 = 84$?
2. After how many decimal places will the decimal expansion of $\frac{23}{2^4 \times 5^3}$ terminate?
3. Write the value of $\cot^2 \theta - \frac{1}{\sin^2 \theta}$
OR
If $\tan A = \frac{4}{3}$ find $\sec A$. (where A is an acute angle)
4. In the figure if $AD=6$ cm., $DB=9$ cm., $AE=8$ cm., and $EC=12$ cm and $\angle ADE=48^\circ$.
Find $\angle ABC$



Section-B

5. For what value of p will the following pair of linear equations have infinitely many solutions :
 $(p-3)x + 3y = p$
 $px + py = 12$
6. Given that $\sqrt{2}$ is irrational, prove that $(5+3\sqrt{2})$ is an irrational number.
7. Find the ratio in which the line segment joining the points $(-3, 10)$ and $(6, -8)$ is divided by $(-1, 6)$.

OR

If the distance of P (x,y) from A (5,1) and B (-1, 5) are equal, then prove that $3x+2y$.

Section-C

9. The sum of the first seven terms of an AP is 63 and the sum of its next 7 terms is 161. Find the 28th term of this A.P.

10. Prove that if a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points, then the other two sides are divided in the same ratio.

OR

In a right, triangle prove that the square of the hypotenuse is equal to the sum of the squares of the other two sides.

11. Find the area of a quadrilateral ABCD, the coordinates of whose vertices are A (-3, 2), B (5,4), C (7, -6) and D (-5, -4).

12. Evaluate : $\frac{\tan 45^\circ}{\sec 60^\circ} + \frac{\cos 60^\circ}{\cos^2 45^\circ} - \frac{\cos 30^\circ}{\cot 45^\circ} + \frac{\sin 60^\circ}{\sin 90^\circ}$

Or

Prove that : $\frac{\cos A - \sin A + 1}{\cos A + \sin A - 1} = \operatorname{Cosec} A \cot A$

Section-D

13. Solve for x : $\frac{1}{x+4} - \frac{1}{x-7} = \frac{11}{30}$, $x \neq -4, 7$

Or

A train travelling at a uniform speed for 360 km. would have taken 48 minutes less to travel the same distance if its speed were 5 km/hr. more. Find the original speed of the train.

14. An AP consists of 50 terms of which 3rd term is 12 and the last term is 106. Find the 29th term.

15. If A (2, -1), B (3,4), C (-2, 3) and D (-3, - 2) be four points in a plane. Show that ABCD is a rhombus but not a square. Find the area of the rhombus.

16. A 7m long flagstaff is fixed on the top of a tower standing on the horizontal plane. From a point on the ground, the angles of elevation of the top and bottom of the flag staff are 60° and 45° respectively. Find the height of the tower correct to one place of decimal. (Use $\sqrt{3} = 1.73$).

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PERIODIC TEST II KEY 2019 – 2020

Sub: Maths

Marks: 40

Class: X

Time: 90 mins.

Section A $1 \times 4 = 4$

For each correct answer 1 mark

1. $\frac{3}{5}$ Or -1
2. $D = 6$
3. $\angle ABC = 48^\circ$
4. After 4 decimal places.

Section B ($2 \times 4 = 8$)

5. $P = 6$
6. Correct prove 2m
7. $k = 2 : 7$
8. $\theta = 30^\circ$

Section C ($3 \times 4 = 12$)

9. $A = 3, d = 2$ and $a_{28} = 57$
10. For Given, To prove, Construction and correct proof
11. Formula —1m, calculations 3m
12. $\frac{3}{2}$ Or correct proof
13. $x = 1, 2$ Or $\frac{360}{x} - \frac{360}{x+5} = \frac{48}{60}$, $x = 45 \text{ Km/Hr.}$
14. 64
15. For showing $AB = BC = CD = AD$ but $AC \neq DB$ and Area = 24 sq. units.
16. Height = $7/\sqrt{3} - 1 = 9.5$ metre.

The end