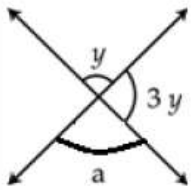
SUMMATIVE ASSESSMENT – I, 2016-17 MATHEMATICS Class – IX
CPS _ Question paper -2 [Code: 4SS6RX0]

1 Find the value of $\sqrt[4]{(36)^{-2}}$.

2 Check whether $x-2$ is a factor of x^3-3x^2+5x-6.

3 Find measure of <a



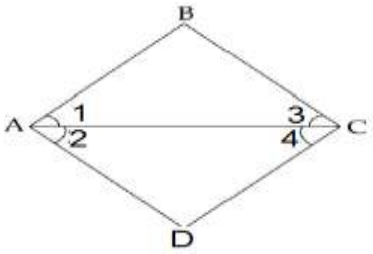
4 If the area of a parallelogram is 64 cm^2, base is 12 cm, then find the altitude of the parallelogram.

5 Is zero (0) a rational number ? Justify your answer.

6 If $3x+2y=12$ and $xy=6$, then find $27x^3+8y^3$.

7 Prove that sum of exterior angles of a triangle is 360°.

8 In the given figure <1 = <3 and <2 =<4 show that <A = <C



9 Plot the points, A(1, 3), B(−3, 4), C(−5, −2) and D(0, −4) on the graph paper.

10 Sides of a triangle are 100 m, 120 m and 140 m. Find its area. (Use $\sqrt{6}=2.45$)

11 Express $32.12\overline{35}$ in the form $\frac{m}{n}$, where m and n are integers and n≠0 ?

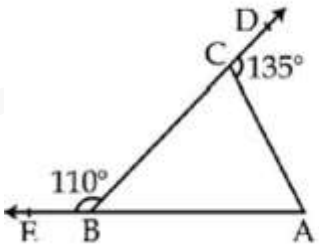
12 If $a=1+\sqrt{7}$, find the value of $\frac{-6}{a}$

13 Factorise : $27x^3-\frac{1}{27y^3}-\frac{9x^2}{y}+\frac{x}{y^2}$

14 Verify that : $x^3+y^3+z^3-3xyz=\frac{1}{2}(x+y+z)\left[(x-y)^2+(y-z)^2+(z-x)^2\right]$

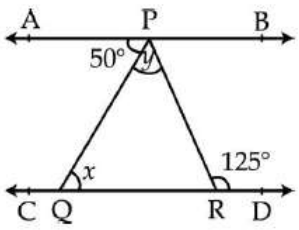
15 In a triangle ABC, X and Y are the points on AB and BC respectively. If $BX=\frac{1}{2}AB$ and $BY=\frac{1}{2}BC$ and $AB=BC$. Show that $BX=BY$.

16



In the figure, sides AB and BC of ΔABC are produced to point E and D respectively. If $\angle EBC=110°$ and $\angle ACD=135°$, find $\angle BAC$.

17



In the figure, if AB||CD, $\angle APQ=50°$ and $\angle PRD=125°$, find $y-x$.

18 If a transversal intersects two parallel lines, then prove that bisectors of alternate interior angles are parallel.

19 Plot a point A(2, −5) on the cartesian plane. Now, change the sign of its ordinate and call it B. Plot B. Now, plot reflections of A and B in y-axis.

20 Find the area of the trapezium in which parallel sides are 25 cm and 10 cm and non-parallel sides are 14 cm and 13 cm.

21 Arrange the $\sqrt[3]{7}$, $\sqrt[4]{11}$ and $\sqrt[6]{50}$ in ascending order.

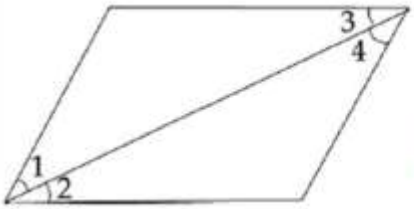
22 Rationalise the denominator of $\frac{1}{\sqrt{2}+\sqrt{3}+\sqrt{5}}$.

23 Divide polynomial $p(x)=3x^4+4x^3+4x^2-8x+1$ by $q(x)=3x+1$. Also find what should be added to $p(x)$ so that it is completely divisible by $q(x)$.

24 Using factor theorem, find the value of 'a', if $2x^4-ax^3+4x^2-x+2$ is divisible by $2x+1$.

25 If $f(x)=x^2-5x+7$, evaluate $f(2)-f(-1)+f\left(\frac{1}{3}\right)$.

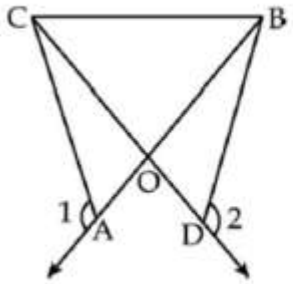
26 Rohan's maid has two children. Both of them have equal number of dresses. Rohan on his birthday plans to give both of them same number of dresses. What you can say about the number of dresses each of them will have after Rohan's birthday ? Which Euclid axiom is used to answer this question ? What value is Rohan depicting by doing so ? Write two more Euclid Axioms.

27 

In the Fig., if $\angle 1 = \angle 3$, $\angle 2 = \angle 4$ and $\angle 3 = \angle 4$.
Write the relation between $\angle 1$ and $\angle 2$, using Euclid's axiom.
Also give two more axioms other than the axiom used in the above situation.

28 In given figure given below AB II CD and DE IIFG Find : < PDE , <AFD and <DFG

29 In the figure, $OA = OD$ and $\angle 1 = \angle 2$. Prove that ΔOCB is an isosceles triangle.



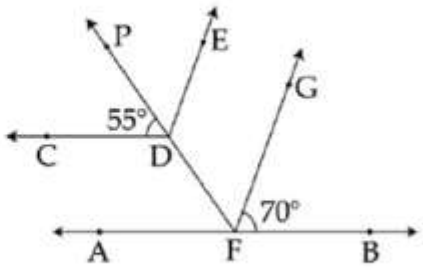


fig for Q.28

30 Two sides AB, BC and median AD of ΔABC are respectively equal to the PQ, QR and median PS of ΔPQR. Show that $\Delta ABC \cong \Delta PQR$.

31 If -2 is a zero of the polynomial $\sqrt{2}(x+p)$ and is also the zero of the polynomial $px^2+kx+2\sqrt{2}$, then find the value of k.