

INDIAN SCHOOL NIZWA
MATHEMATICS -WORK SHEET
CH:1 NUMBER SYSTEMS

DATE: _____

NAME: _____

CLASS: IX

1. Find $x^2 - y^2$ if $x = \frac{2-\sqrt{5}}{2+\sqrt{5}}$, $y = \frac{2+\sqrt{5}}{2-\sqrt{5}}$ Ans: $-144\sqrt{5}$
2. Express $0.\bar{4}$ in $\frac{p}{q}$ form Ans: $\frac{4}{9}$
3. Determine p and q if $\frac{7+\sqrt{5}}{7-\sqrt{5}} - \frac{7-\sqrt{5}}{7+\sqrt{5}} = p - 7\sqrt{5}q$ Ans: $p = 0$, $q = \frac{-1}{11}$
4. Simplify $\frac{6}{2\sqrt{3}-\sqrt{6}} + \frac{6}{\sqrt{3}+\sqrt{6}} - \frac{4\sqrt{3}}{\sqrt{6}-\sqrt{2}}$ Ans: 0 or $2\sqrt{3}-\sqrt{12}$
5. Show that $\frac{1}{3-\sqrt{8}} - \frac{1}{\sqrt{8}-\sqrt{7}} + \frac{1}{\sqrt{7}-\sqrt{6}} - \frac{1}{\sqrt{6}-\sqrt{5}} + \frac{1}{\sqrt{5}-2} = 5$
6. Find $x + \frac{1}{x}$, if $x = 2 + 3\sqrt{2}$ Ans: $\frac{13}{7} + \frac{45\sqrt{2}}{14}$
7. Evaluate, $(0.00032)^{-\frac{2}{5}}$ Ans: 25
8. Simplify $2.0\bar{15}$ in the $\frac{p}{q}$ form. Ans: $\frac{133}{66}$
9. If $x = 9 - 4\sqrt{5}$, find the value of $x^2 + \frac{1}{x^2}$ Ans: 318
10. Express $1.3\bar{2} + 0.\bar{35}$ as a fraction in simplest form. Ans: $\frac{1659}{990}$
11. If $x = 2 - \sqrt{3}$, then find the value of $\left(x + \frac{1}{x}\right)^3$. Ans: 64

INDIAN SCHOOL NIZWA
MATHEMATICS -WORK SHEET
CH: 2 POLYNOMIALS

DATE: _____

NAME: _____

CLASS: IX

1. The maximum number of terms in a polynomial of degree 10 is _____
2. Zero of the zero polynomial is _____
3. Degree of the polynomial $(x^3 - 2)(x^2 + 11)$
4. Factorise $a - b - a^3 + b^3$
5. If $a + b + c = 7$ and $ab + bc + ca = 20$ find the value of $a^2 + b^2 + c^2$
6. Simplify $(\sqrt{x} + \sqrt{y})(\sqrt{x} - \sqrt{y})(x + y)(x^2 + y^2)$
7. If $2x + 3y = 8$ and $xy = 4$ then find the value of $4x^2 + 9y^2$.
8. If $x^2 + \frac{1}{x^2} = 38$, then find the value of $(x - \frac{1}{x})$
9. If $a^2 + b^2 + c^2 = 90$ and $a + b + c = 20$ then find the value of $ab + bc + ca$.
10. If $x = \frac{-1}{3}$ is a zero of the polynomial $p(x) = 27x^3 - ax^2 - x + 3$ then find the value of
 - a.
11. Factorise $x^2 - y^2 + 2x + 1$
12. Using Remainder Theorem, find the value of K so that $(x^3 - 2x + K)$ leaves the remainder 3 when divided by $(x + 1)$.
13. Factorise $4a^2 - 4\sqrt{3}a + 3$

INDIAN SCHOOL NIZWA

6. Lines and Angles

Date: 18-05-20

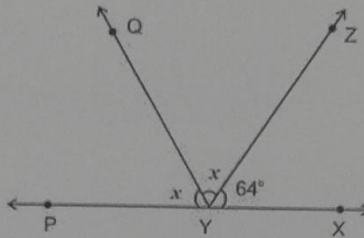
Q 1 State corresponding angles axiom.

Mark (1)

Q 2 Define collinear points.

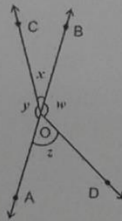
Mark (1)

Q 3 It is given that $\angle XYZ = 64^\circ$ and XY is produced to a point P. If ray YQ bisect $\angle ZYP$, find $\angle XYQ$ and reflex $\angle QYP$.



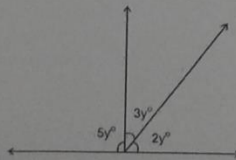
Marks (2)

Q 4 In figure if $x + y = w + z$, then prove that AOB is a line.



Marks (2)

Q 5 In the figure, find the value of y° .



Marks (2)

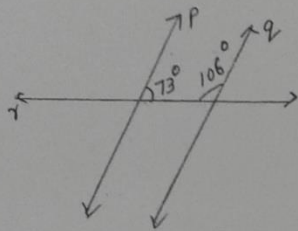
Q 6 In Fig, lines PQ and RS intersect each other at point O.

If $\angle POR : \angle ROQ = 5 : 7$, find all the angles.

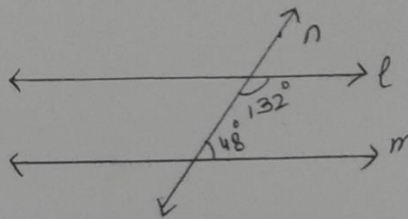
Q.7 Two adjacent angles are equal. Is it necessary that each of these angles will be a right angle? Justify your answer.

Q.8 In the following figures which of the two lines are parallel and why?

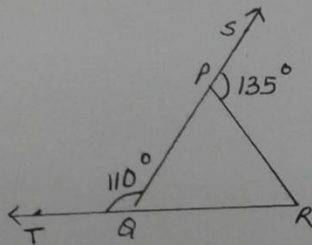
(i)



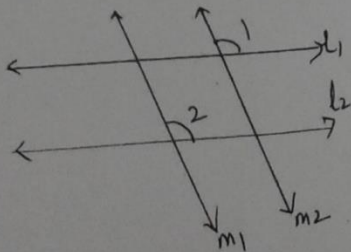
(ii)



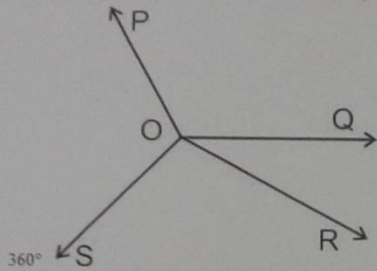
Q.9 In the given fig. sides QP and RQ of ΔPQR are produced to point S and T respectively. If $\angle PQT = 110^\circ$ and $\angle SPR = 135^\circ$ find $\angle PRQ$



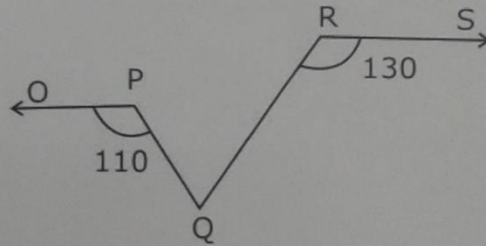
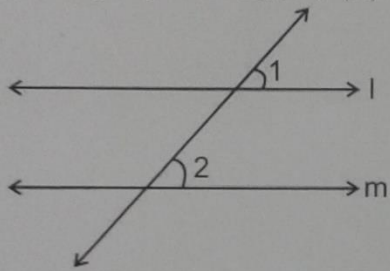
Q.10 In the fig. $l_1 \parallel l_2$ and $m_1 \parallel m_2$ if $\angle 1 = 115^\circ$ find $\angle 2$



Q 11 In the given figure find the value of OP, OQ, OR and OS be any four rays, Prove that $\angle POQ + \angle QOR + \angle SOR + \angle POS =$



Q 12 In the given figure $\angle 1 = 60$ and $\angle 2 = (2/3)^{\text{rd}}$ of a right angle. Prove that the line $l \parallel m$.



Q 13 In the given figure, $OP \parallel RS$. Determine $\angle PQR$.

Q 14 If two parallel are intersected by a transversal, the bisectors of any pair of alternate interior angles are parallel.

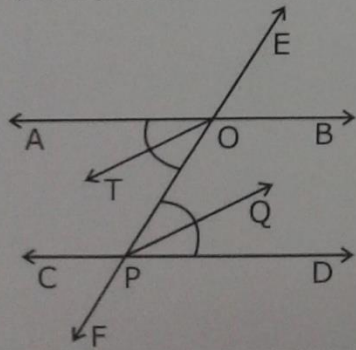


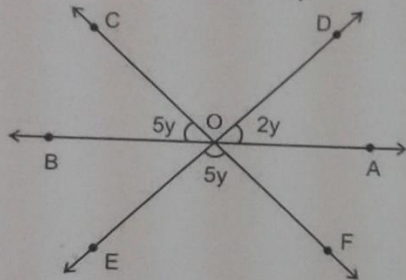
Fig-3

Marks (3)

Q 15 Two supplementary angles are in the ratio 4:5. Find the angles.

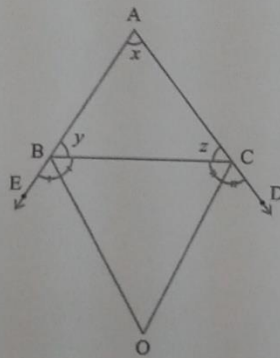
Marks (3)

Q 16 In figure, determine the value of y .



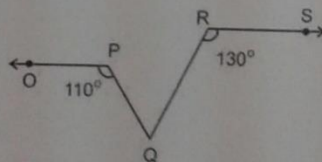
Marks (3)

Q 17 In figure the sides AB and AC of $\triangle ABC$ are produced to points E and D respectively. If bisectors BO and CO of $\angle CBE$ and $\angle BCD$ respectively meet at point O, then prove that $\angle BOC = 90^\circ - \frac{1}{2}\angle BAC$



Marks (4)

Q 18 In figure $OP \parallel RS$. Determine $\angle PQR$.



Marks (4)

Q 19 ABCDE is a regular pentagon and bisector of $\angle BAE$ meets CD in M. If bisector of $\angle BCD$ meets AM at P find $\angle CPM$