INTERNATIONAL INDIAN SCHOOL-DAMMAM

MATHEMATICS WORKSHEET 2014-2015**(SA 1)**

CLASS IX LINES AND ANGLES

1. The anglesof atriangle are in the ratio 5:3:7.The triangle is

(An acute angled triangle, an obtuse angled triangle, an isosceles triangle, a right

angled triangle)

2. If one of the angles of a triangle 130 deg then the angle between the bisectors of the other two angle can be

(50 deg, 155 deg, 145 deg, 65 deg)

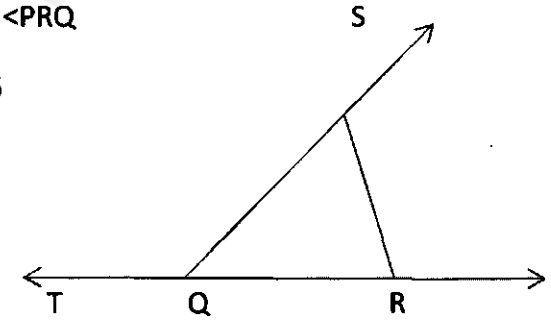
3. If two interior angles on the same side of the transversal intersecting two parallel lines are in the ratio 2:3 then the greater of the two angle is

(54 deg, 108 deg, 120 deg, 136 deg)

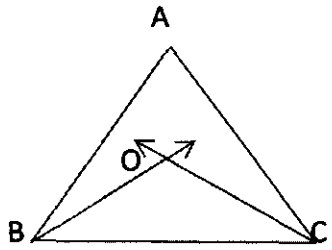
4. In a ABC if 2<A=3<B= 6<C then <A, <B, <C are

(30 90 30, 30 30 90, 90 60 30, None of these)

5. In fig sides QP and RQ of PQR are produced to points S and T respectively. If<SPR=135 deg and <PQT=110 deg.Find <PRQ

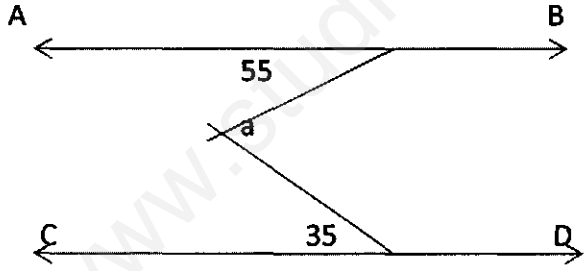


6. In figure the bisector of <ABC and <BCA intersect each other at point O Prove that <BOC=90+ (1/2)<A

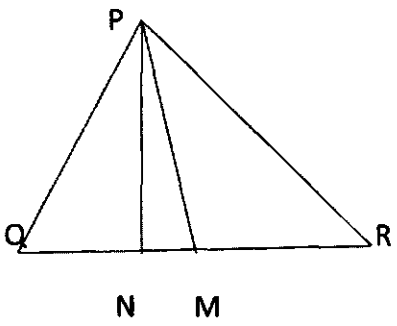


7. The side BC of▲ ABC is produced from ray BD.CE is drawn parallel to AB .Show that <ACD=<A+<B. Also prove that<A+<B+<C=180.

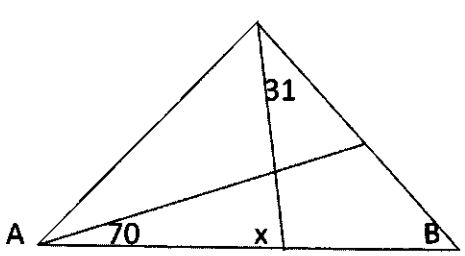
8. In given fig AB//CD. Determine a



9. In fig <Q ><R and M is a point on QR such that PM is the bisector of <QPR.If the perpendicular from P on QR meets QR at N then prove that <MPN= (1/2) (<Q-<R)



10. If<ADB is a right angle, find the value of angle x



INTERNATIONAL INDIAN SCHOOL-DAMMAM

MATHEMATICS WORKSHEET 2014-2015**(SA 1)**

CO ORDINATE GEOMETRY CLASS IX 2014-2015

1.In which quadrant do the following points lie?

1) (4,2) 2) (1,8) 3) (-1,3) 4) (5,8) 5) (0,5) 6) (-5,-6) 7) (0,9)

2. Plot the following points on the graph paper.

P(-2,5) Q (2,-5) R (0,5) S (4,5) T (5,0)

3. The measure of the angle between the co ordinate axes is -----

4.A point whose abscissa and ordinate are 2 and -7 respectively, lies in ---------- quadrant .

5.Points (-4,0) and (3.0) lie in ----------axes.

6. The ordinate of any point on x axis is---------

7.The abscissa of any point on y axis is ----------

8.Two points having same abscissa and different ordinates lie in

(a) X axis. (b) y axis (c) a line parallel to y axis (d) a line parallel to x axis.

9.The perpendicular distance of the point P (4,5) from x axis is --------

10.Plot the points A (2,0) B (6,0) C (4,6) .Write the figure obtained .Also find its area.

11.Plot the points P (0,1) Q (0.5) R (3,4).Write the figure obtained.Also find its area.

12.Plot the points A (-3,-7) B (3,1) C (7,6) Join them in order.State whether they are collinear.

INTRODUCTION TO EUCLID GEOMETRY

1.If a point C lies between two points A and B such that AC=BC ,then prove that AC=1/2 AB.Explain by drawing the figure.

2.In the following figure , the point Z lies between x and y such that xz=yz

(a) xz=xy (b) xz=1/2xy (c) xy=1/2xz

X ..... Z ..... Y

3.Which of the following need a proof?

a) an axiom b) a postulate c) a theorem

4.Through two points

(i) a unique line can be drawn

(ii) no line can be drawn

(iii) more than one line can be drawn.

5. Through a fixed point

(i) a unique line can be drawn

(ii) no line can be drawn

(iii) more than one line can be drawn

6. Number of line segments required to form a closed figure is

(i) 2

(ii) 3

(iii)4

7. Two lines having a common point is called

(a) parallel lines

(b) intersecting lines (c) coincident lines

CLASS IX

MATHS WORKSHEET – HERON'S FORMULA (2014-2015)

1. The area of an equilateral triangle is $25\sqrt{3}$ cm^2. Find its perimeter.

2. Find the area of an isosceles triangle having base 4 cm and thelengths of one of the equal sides is 5 cm

3. The altitude of an equilateral triangle is $5\sqrt{3}$. Find its area.

4. Find the area of an isosceles triangle having base x cm and one of the equal sides is y cm

5. The parallel sides of a trapezium have lengths 42 cm and 26 cm and the distance between them is 16 cm. Find its area.

6. The perimeter of an equilateral triangle is 48 cm. Find its area.

7. The edges of s triangular board are 12 cm,17 cm and 25 cm. The cost of painting one of the surface at the rate of 50 paisa per cm^2. Find the total cost.

8. The lengths of two adjacent sides of a parallelogram are 17 cm and 12 cm. One of its diagonals is 25 cm long. Find the area of parallelogram. Also find the length of altitude from vertex on the side of length 12 cm.

9. The lengths of the sides of a triangle are 7 cm,13 cm,and 12 cm. Find the length perpendicular from the opposite vertex to the side whose length is 12 cm.

10. The perimeter of an isosceles triangle is 32 cm. The ratio ofthe equal sides to its base is 3:2. Find the area of the triangle.

11. The side of a triangular field are 4 cm, 40 cm and 9 cm. Find the number of rose beds that can be prepared in the field,if each rose bed on an average needs 900 cm^2 space.

12. The triangle and the parallelogram having the same base and the same area. If the side of the triangle are 9 cm, 12 cm and 15 cm and the parallelogram stands on the base 9 cm.Find the height of the parallelogram.

13 Find the area of the quadrilateral ABCD which AD=24 cm $\angle A=90^0$ and BCD form an equilateral triangle,whose each side to 26 cm. Also find perimeter of the quadrilateral.($\sqrt{3}$=1.73)

14. The size of the triangle are in the ratio 5:12:30 and its perimeter 150 cm Find area of the triangle.

15. The cost of the levelling a ground in the form of a triangle having the size 51 m, 37 m and 20 m at the rate of Rs. 5 Per m Square if Rs 918. State whether the statement is true or false and justify your answer.

16. Area of an equilateral triangle if $81\sqrt{3}$ cm^2. Find its perimeter.

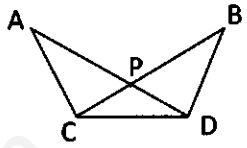
WORKSHEET(2014- 2015)

SUB: MATHEMATICS

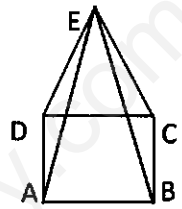
CLASS: IX

TRIANGLES

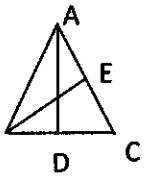
1. In the figure αBCD = α ADC and α ACB = α BDA.
Prove that AD= BC andαA=αB



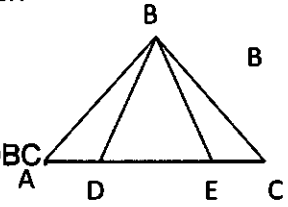
2. ABCD is square and DEC is an equilateral triangle.
Prove that AE = BE and Find α DAE



3. AD and BE are respectively altitudes of a triangle ABC such that AE =BD.Prove that AD = BE



4. In the figure AB = BC and AD=EC. Prove that Δ ABE = Δ DBC

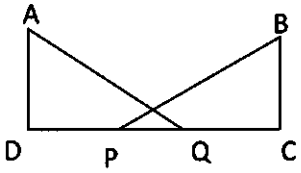


5. In Δ ABC, αA = 90^0 , D is the midpoint of BC. DM perpendicular to AB, DL perpendicular to AC and DM = DL. Prove that AB = AC.

6. In a Δ ABC, AB=AC, D is a point in the interior of Δ ABC such that αDBC=αDCB. Prove that AD bisects αBAC.

7. Prove that if two isosceles triangles have a common base, the line joining their vertices bisects the common base at right angles.

8. In the figure AD perpendicular to CD and BC perpendicular to CD.
If AQ = BP and DP = CQ, Prove that αDAQ=αCBP

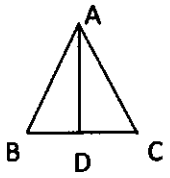


9. Prove that the sum of three sides of a triangle is greater than the sum of its three medians.

10. Prove that the sum of three sides of a triangle is greater than the sum of its three altitudes.

11. AD is the bisector of αA of △ABC where D lies on BC. Prove that AB > BD and AC > CD.

12. In the figure AB>AC, prove that AB > AD



13. Δ ABC is an isosceles triangle in which AB=AC. Side BA is produced to D such that AD=AB. Show that αBCD is a right angle.

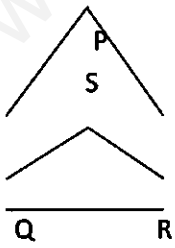
14.

15. Diagonals PR and QS of a quadrilateral PQRS intersect each other at O. prove that

a) PQ+QR+RS+SP > PR+QS

b) PQ+QR+RS+SP< 2(PR + QS)

16. In the figure , PQ > PR. QS and RS are the bisectors of αQ and αR respectively. Prove that SQ > SR.



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NUMBER SYSTEM

1. The number 0.318564318564318564..... is
   a) A natural number b) an integer c) a rational number d) an irrational number
2. Which of the following is rational a) $\sqrt{7}$ b) π c) $\frac{0}{4}$ d) $\frac{7}{0}$
3. $\overline{0.001}$ when expressed in the form $\frac{p}{q}$,where p,q are integers ,$q \neq 0$,is
   a) $\frac{1}{100}$ b) $\frac{1}{1000}$ c) $\frac{1}{999}$ d) $\frac{1}{1999}$
4. If 'n' is a natural number,then $\sqrt{n}$ is
   a) Always a natural no: b) always an irrational no: c) always a rational no: d) sometimes a natural no: and sometimes an irrational no:
5. If $8^{x+1}=64$,what is the value of 3^{2x+1} ? a)1 b) 3 c) 9 d) 2
6. The seventh root of x divided by the eight root of x is
   a) X b) $\sqrt{x}$ c) $\sqrt[56]{x}$ d) $\frac{1}{\sqrt[56]{x}}$
7. The value of $\frac{\sqrt{48}+\sqrt{32}}{\sqrt{27}+\sqrt{18}}$ isa) $\frac{4}{3}$ b) 4 c) 3 d) $\frac{3}{4}$
8. $\frac{1}{\sqrt{9}-\sqrt{8}}$ is equal to a) $3+2\sqrt{2}$ b) $3-2\sqrt{2}$ c) $\frac{1}{3+2\sqrt{2}}$ d) $\frac{3}{2}-\sqrt{2}$

9.Find two rational and two irrational numbers lying between 0.20220222022220.....and 0.21221222122221.....

10.Express each of the following decimals in the form $\frac{p}{q}$,where p,q are integers ,$q \neq 0$

a) 1.6666666..... b) $0.\overline{418}$ c)0.1636363..... d) 2.3646464..... e) 0.123123123.....

11. Represent the following on a number line:

a) $\sqrt{2}$ b) $\sqrt{3}$ c) $\sqrt{5}$ d) $\sqrt{5.6}$ e) $\sqrt{8.7}$

12.Simplify the following: a) $(\sqrt{2}-2)^2$ b) $(\sqrt{5}-2)(\sqrt{3}-\sqrt{5})$

13. If $\sqrt{2}$ =1.414, find the value of $\sqrt{3}$ / $\sqrt{6}$ upto three places of decimals.

14. Rationalise the denominator: a) $\frac{\sqrt{2}+1}{\sqrt{5}}$ b) $\frac{2\sqrt{3}-\sqrt{5}}{2\sqrt{2}+3\sqrt{3}}$

15. If $x = 2+\sqrt{3}$, find the value of $x^2+\frac{1}{x^2}$.

16. Visualise 4.3579 on the number line.

17. If a and b are rational numbers , find the values of a and b

a) $\frac{5+2\sqrt{3}}{7+4\sqrt{3}} = a+b\sqrt{3}$ b) $\frac{\sqrt{2}+\sqrt{3}}{3\sqrt{2}-2\sqrt{3}} = a-b\sqrt{6}$ c) $\frac{3}{\sqrt{3}+1}+\frac{5}{\sqrt{3}-1} = a+b\sqrt{3}$

18. If $x = \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$ and $y = \frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$,find the value of $x^2 + y^2 + xy$.

19. Simplify: $\frac{\sqrt{5}-2}{\sqrt{5}+2} - \frac{\sqrt{5}+2}{\sqrt{5}-2}$

20. Prove that $\frac{1}{3-\sqrt{8}} - \frac{1}{\sqrt{8}-\sqrt{7}} + \frac{1}{\sqrt{7}-\sqrt{6}} - \frac{1}{\sqrt{6}-\sqrt{5}} + \frac{1}{\sqrt{5}-2} = 5$

21. If $x= 2+\sqrt{3}$, find the value of $x^3 + \frac{1}{x^3}$.

22. If $x=3+\sqrt{8}$, find the value of $x^2 + \frac{1}{x^2}$.

23. Find x, if $\frac{3^{2x-8}}{225} = \frac{5^3}{5^x}$.

24. Simplify: a) $\sqrt{5}^{-3}\sqrt{2}^{-3}$ b) $\sqrt[5]{32^{-3}}$ c) $\left(\frac{243}{32}\right)^{\frac{-4}{5}}$ d) $625^{-1/4}$

25. Show that: $\frac{(x^{a+b})^2(x^{b+c})^2(x^{c+a})^2}{(x^a x^b x^c)^4} = 1$

26. If $\frac{9^n X 3^2 X\left(3^{\frac{-n}{2}}\right)^{-2} - 27^n}{3^{3m} X 2^3} = \frac{1}{27}$, prove that m-n =1.

27. Find x : a) $2^{x-7} \cdot 5^{x-4} = 1250$. b) $2^{5x} / 2^x = \sqrt[5]{2^{20}}$

28. Find the value of $\sqrt[3]{7} X \sqrt[3]{49}$

29. Simplify: $\frac{(25)^{\frac{3}{2}} X (243)^{\frac{3}{5}}}{(16)^{\frac{5}{4}} X \left(8^{\frac{4}{3}}\right)}$.

30. Simplify: $\left(\frac{81}{16}\right)^{\frac{-3}{4}} X \left[\left(\frac{25}{9}\right)^{\frac{-3}{2}} \div \left(\frac{5}{2}\right)^{-3}\right]$

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