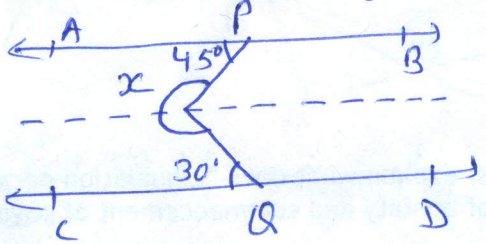
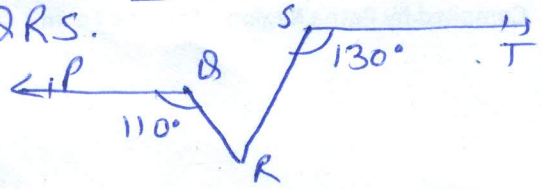
Revision Assignment
CLASS IX (MATH).

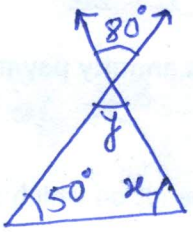
1. If $x-2$ is a factor of $x^3-3x+5a$ then find the value of 'a'
2. Find the remainder when x^3+3x^2+3x+1 is divided by $5+2x$.
3. If $a+b+c=5$ and $ab+bc+ca=10$ then prove that $a^3+b^3+c^3-3abc=-25$
4. Find the value of a and b so that the polynomial x^3-10x^2+ax+b is exactly divisible by $(x-1)$ as well as $(x-2)$
5. Without actually calculating, find the value of $(25)^3-(75)^3+(50)^3$
6. Find the value of K, if $x-1$ is a factor of $4x^3+3x^2-4x+K$
7. factorise:-
   (i) $9x^2-12x+3$
   (ii) $16x^2+4y^2+9z^2-16xy-12yz+24xz$
   (iii) $27y^3+125z^3$
   (iv) $a^3-8b^3-64c^3-24abc$
8. Locate the points $(5,0)$, $(0,5)$, $(2,5)$, $(5,2)$, $(-3,5)$, $(-3,-5)$, $(5,-3)$ and $(6,1)$ in the cartesian plane.
9. In fig. find the value of x



10. In fig PQ||ST, $\angle PQR=110°$, $\angle RST=130°$ then find the value of $\angle QRS$.



Find the value of the unknown x in the fig.



12. The Perimeter of a rhombus is 40 cm. If one of its diagonals is 16 cm, find the area of the rhombus.

13. Two parallel sides of a trapezium are 60 cm, 77 cm, and the other sides are 25 cm and 26 cm. Find the area of trapezium.

14. Rationalize the denominator :-

(i) $\frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$ (ii) $\frac{4}{\sqrt{7}+\sqrt{3}}$ (iii) $\frac{3-2\sqrt{2}}{3+2\sqrt{2}}$

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

16. Represent the real number $\sqrt{10}$ on the number line

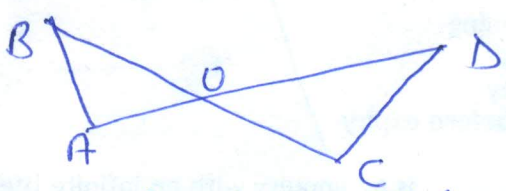
17. Express the following in the form of $\frac{p}{q}$, where p and q are integers and $q \neq 0$

(i) $0.\overline{6}$ (ii) $0.4\overline{7}$ (iii) $0.\overline{001}$ (iv) $0.\overline{26}$

18. Simplify (i) $\left[5\left(8^{\frac{2}{3}}+27^{\frac{1}{3}}\right)^3\right]^{\frac{1}{4}}$

(ii) $\sqrt[4]{81} - 8\cdot\sqrt[3]{216} + 15\sqrt[5]{32} + \sqrt{225}$

19. In fig. $\angle B < \angle A$ and $\angle C < \angle D$. Show that $AD < BC$



20 Show that bisectors of angles of parallelogram form a rectangle.