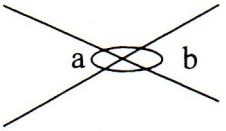
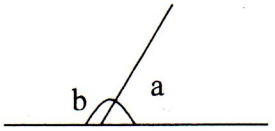
Pairs of angles

Vertically opposite angles : When two straight lines crosses at a point , then the angles having same vertex but not common arms called vertically opposite angles . Vertically opposite angles are equal,



Here in the figure angles **a** and **b are** equal. a = b
Example If angle a = 65 degree, Find the value of b.
b= 65 degree, (Vertically opposite angles are always equal)

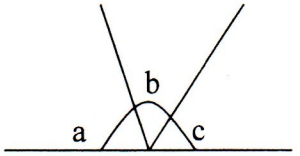
Supplementary angles: Pair of Angles which add up to 180 degree is called supplementary angles.



Here in the figure a, and b are supplementary angles. $a + b = 180^0$.

Example If $a= 65^0$ find the value of angle b.
$65^0 + b = 180^0$
$b= 180^0-65^0$
$b=115^0$

Angles in a straight line: All angles formed in the straight line add up to 180 degree.

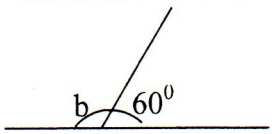


Here in the figure a, b, and c are angles formed in a straight line. a+ b+ c= 180 degree.

Example If $b = 45^0$ and $c = 6^05$ find the value of angle 'a'.
$a+ 45^0+ 65^0= 180^0$
$a+ 110^0= 180^0$
$a = 180^0- 110^0$
$a= 70^0$

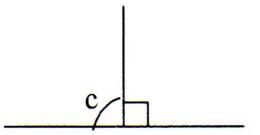
Find the unknown angles from the figure.

1)



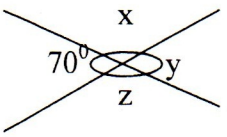
b=_____

2)



c=_____

3)

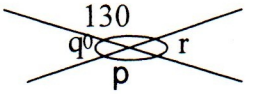


x =_____

y= _____

z=_____

4)

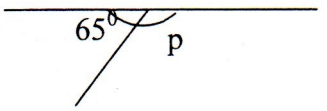


p =_____

q= _____

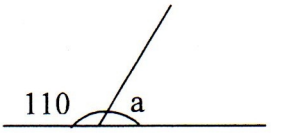
r=_____

5)



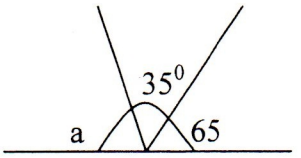
p = _____

6)



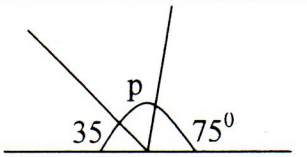
a= _____

7)



a= _____

8)



p= _____

9) p and q are vertically opposite angles. p= 60 degree. Find angle q.

q=_____

10) ' a' and 'b' are supplementary angles. a is 55 degree. Find angle 'b'.

b=_____

Angles x, y , z are the angles in the straight line, Find the unknown angles,

11) If x = 35^0 and y = 60^0 find z . _____

12) If y = 55^0 and z = 75^0 find x . _____

13) If z = 45^0 and y = 60^0 find x . _____

14) If x = 35^0 and z = 90^0 find y . _____

15) If y = 41^0 and x = 75^0 find z . _____