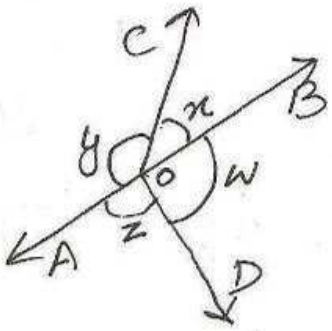
(4)



to prove AOB is a line

proof

$x+y+z+w=360^\circ$ [Sum of angles around a point]

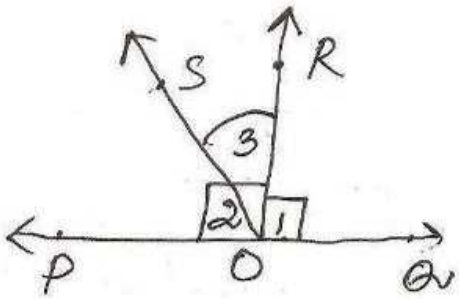
$x+y+x+y=360^\circ$ [$\because x+y=w+z$]

$\Rightarrow 2(x+y)=360$

$\Rightarrow x+y=\frac{360}{2}$ 180°

$\therefore$ AOB is a line [linear pair axiom]

(5)



To Prove

$\angle ROS=\frac{1}{2}(\angle QOS-\angle POS)$

Proof $\angle QOS=\angle 1+\angle 3$ ... (i)

$\angle 2=\angle 3+\angle POS$ ... (ii)

(i) + (ii)

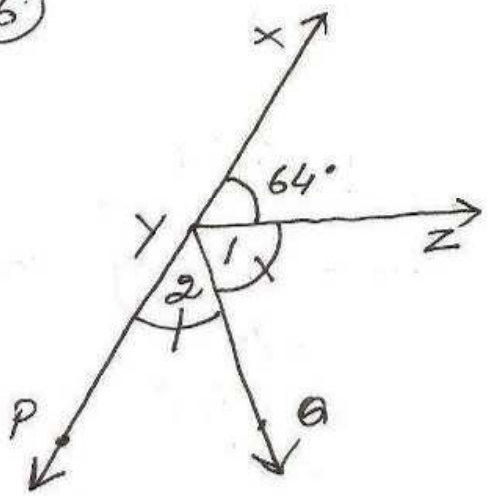
$\angle QOS+\angle 2=\angle 1+\angle 3+\angle 3+\angle POS$

[$\because \angle 1=\angle 2=90^\circ$]

$\Rightarrow 2\angle 3=\angle QOS-\angle POS$

$\Rightarrow \angle ROS=\frac{1}{2}(\angle QOS-\angle POS)$

(6)



to find $\angle XYQ$, reflex $\angle QYP$

Sol

$\angle PYZ+\angle XYZ=180^\circ$ [linear pair axiom]

$64^\circ+\angle 1+\angle 2=180^\circ$

$\angle 1+\angle 1=180^\circ-64$

[$\because \angle 1=\angle 2$]

$\Rightarrow 2\angle 1=116$

$\Rightarrow \angle 1=\frac{116}{2}$ 58°

$\angle XYQ=\angle XYZ+1$

$=64+58$

$=122^\circ$

reflex $\angle QYP=360-58^\circ$

$=302^\circ$