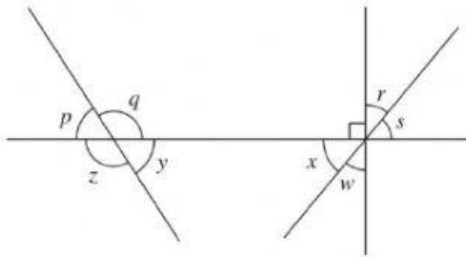


## 8.2 Angles related to Intersecting Lines

- A. The diagram consists of four straight lines. Identify and state all pairs of vertically opposite angles and adjacent angles.

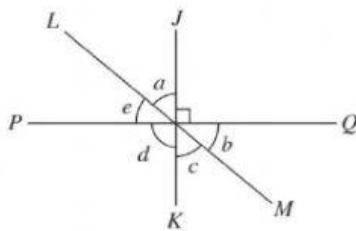
SP8.2.1 TP1



*p and q*  
*q and z*  
*p and z*  
*q and y*  
*r and w*  
*y and z*  
*s and x*  
*r and s*  
*w and x*  
*p and y*

- B. In the diagram, JK, LM and PQ are straight lines. Mark (✓) for the correct statement and (✗) for the incorrect statement.

SP8.2.1 TP2



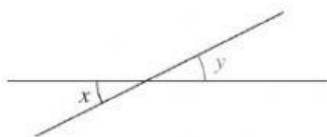
1.  $b = e$  ( )
2.  $d = 90^\circ$  ( )
3.  $c = d$  ( )

- C. On each of the following diagrams, mark and label the angle  $y$  using the label given:

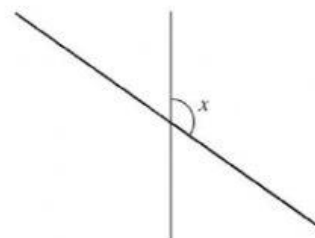
SP8.2.1 TP2

### Example

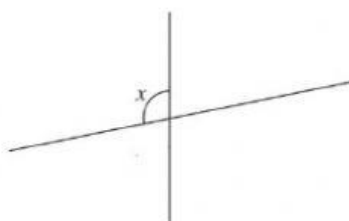
$x$  and  $y$  are vertically opposite angles.



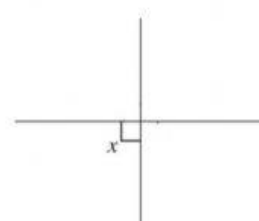
1.  $x$  and  $y$  are vertically opposite angles.



2.  $x$  and  $y$  are adjacent angles.



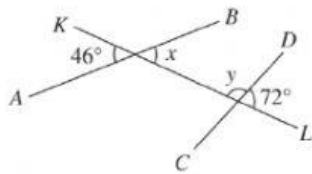
3.  $x$  and  $y$  are adjacent angles.



A. In each diagram, AB, CD and KL are straight lines. Find the values of  $x$  and  $y$ .

SP8.2.2 TP3

**Example**

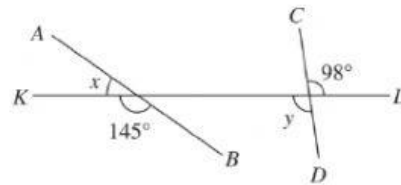


$$x = 46^\circ$$

$$y + 72^\circ = 180^\circ$$

$$y = 108^\circ$$

1.

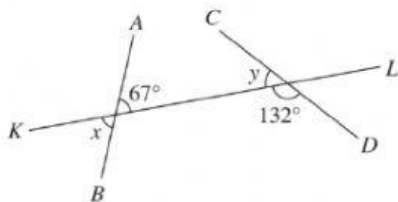


$$x + 145^\circ = 180^\circ$$

$$x = 35^\circ$$

$$y = 82^\circ$$

2.  $\angle JKL = 105^\circ$

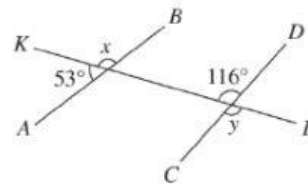


$$x = 113^\circ$$

$$y + 67^\circ = 180^\circ$$

$$y = 113^\circ$$

3.  $\angle RST = 45^\circ$



$$x + 53^\circ = 180^\circ$$

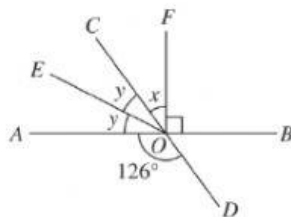
$$x = 127^\circ$$

$$y = 64^\circ$$

B. Solve each of the following problems.

SP8.2.3 TP4

1. In the diagram, AOB and COD are straight lines.



Find the values of  $x$  and  $y$ .

$$x + y = 126^\circ$$

$$x = 126^\circ - y$$

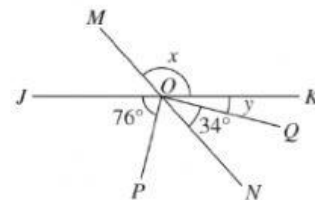
$$y + y + 126^\circ = 180^\circ$$

$$y + 126^\circ = 180^\circ$$

$$2y = 54^\circ$$

$$y = 27^\circ$$

2. In the diagram, JOK and MON are straight lines.  $\angle NOP$  and  $\angle NOQ$  are complementary angles.



Calculate the value of  $x - y$ .

$$\angle NOP + 34^\circ = 90^\circ$$

$$\angle NOP = 56^\circ$$

$$x = 76^\circ + \angle NOP$$

$$= 76^\circ + 56^\circ$$

$$= 132^\circ$$

$$y + 34^\circ + 56^\circ + 76^\circ = 180^\circ$$

$$y + 166^\circ = 180^\circ$$

$$y = 14^\circ$$

$$x - y = 132^\circ - 14^\circ$$

$$= 118^\circ$$