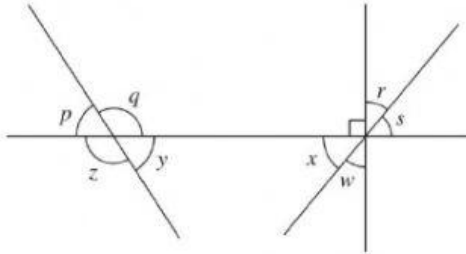


8.2 Angles related to Intersecting Lines

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

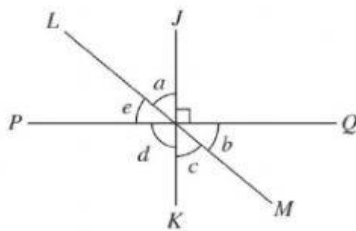
SP8.2.1 TP1



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



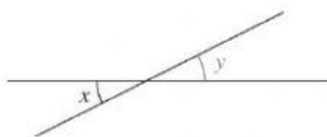
1. $b = e$ ()
2. $d = 90^\circ$ ()
3. $c = d$ ()

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

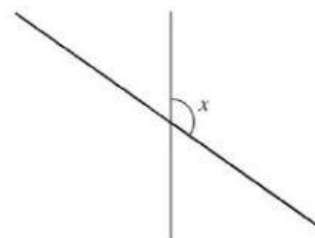
SP8.2.1 TP2

Example

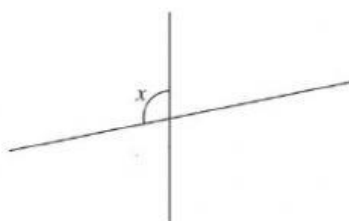
x and y are vertically opposite angles.



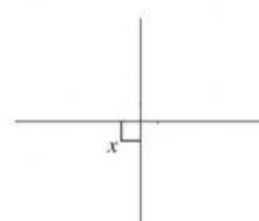
1. x and y are vertically opposite angles.



2. x and y are adjacent angles.



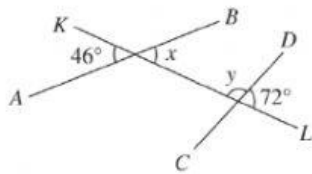
3. x and y are adjacent angles.



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

SP8.2.2 TP3

Example

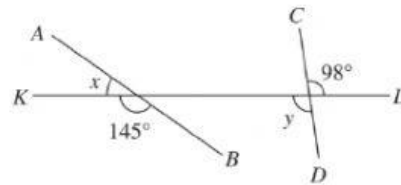


$$x = 46^\circ$$

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

$$y = 108^\circ$$

1.

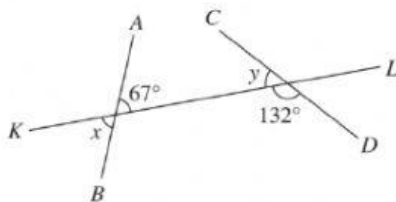


$$x + 145^\circ = 180^\circ$$

$$x = 35^\circ$$

$$y = 82^\circ$$

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

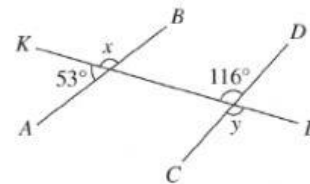


$$x = 113^\circ$$

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

$$y = 113^\circ$$

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



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

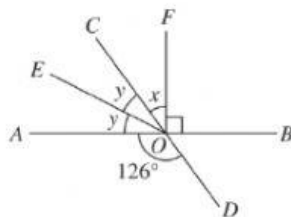
$$x = 127^\circ$$

$$y = 64^\circ$$

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 .

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

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

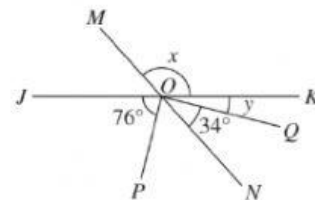
$$y + y + 126^\circ = 180^\circ$$

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

$$2y = 54^\circ$$

$$y = 27^\circ$$

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



Calculate the value of $x - y$.

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

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

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

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

$$= 132^\circ$$

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

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

$$y = 14^\circ$$

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

$$= 118^\circ$$