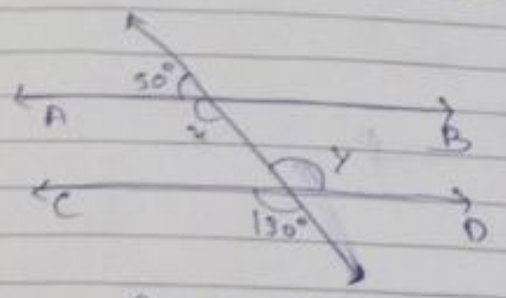
Exercise - 6.2

(1)



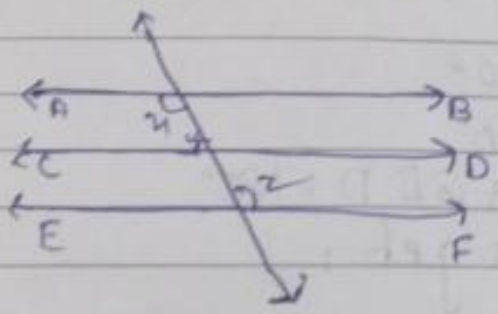
$x + 50° = 180°$

$\therefore x = 130°$

So, $y = 130°$ (given)

This proves that alternate interior angles are equal and so AB || CD.

(2)



$x + y = 180°$

$6 = z$

and, $y + 6 = 180°$

$y + z = 180°$

$z = 7w$

$\therefore 3w + 7w = 180°$

$10w = 180°$

$w = 18°$

$y = 3 \times 18° = 54°$

$z = 7 \times 18° = 126°$

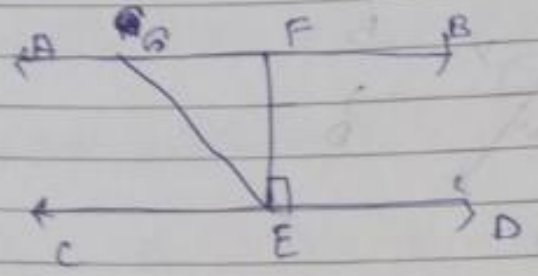
$x + y = 180°$

$x + 54 = 180°$

$\therefore x = 126°$

(4)

(3)



Given, $GED = 126°$

So, $GED = AGE = 126°$

Also,

$GED = AEF + FED$

$EF \perp CD$, $FED = 90°$

$\therefore GED = AEF + 90°$

Again, $FGE + GED = 180°$

$GED = 126°$ we get,

(5)

$FGE = 54°$

So,

$AGE = 126°$

$AEF = 36°$ and

$FGE = 54°$

(4)

PQR + QRU = 180°
∴ QRU = 70°

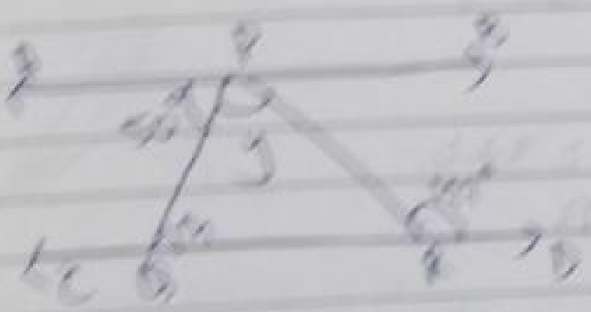
RST + SRT = 180°
∴ SRT = 50°

QRU + QRS + SRT = 180°

QRS = 180° − 70° − 50°

Hence, QRS = 60°

(5)



APQ = PQR

APQ = 50° and PQR = x
x = 50°

APR = PRD
or, APR = 127°

$APR = APQ + QPR$

$QPR = Y$ and $APR = 127°$

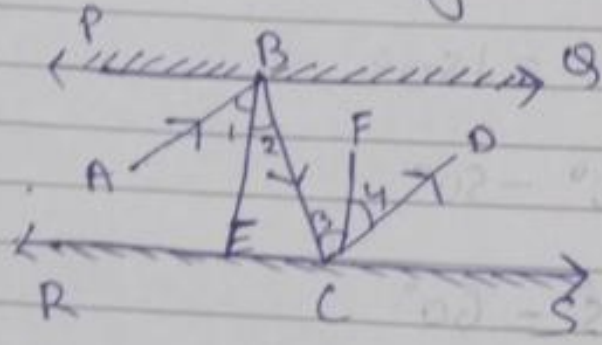
$127° = 50° + y$

$y = 77°$

Thus, the values of x and y are calculated as:

$x = 50°$ and $y = 77°$

(6)



$1 = 2$ and $3 = 4$

So, $2 = 3$

Now, $1 + 2 = 3 + 4$

$ABC = DCB$

So, ABCD alternate interior angles are equal.