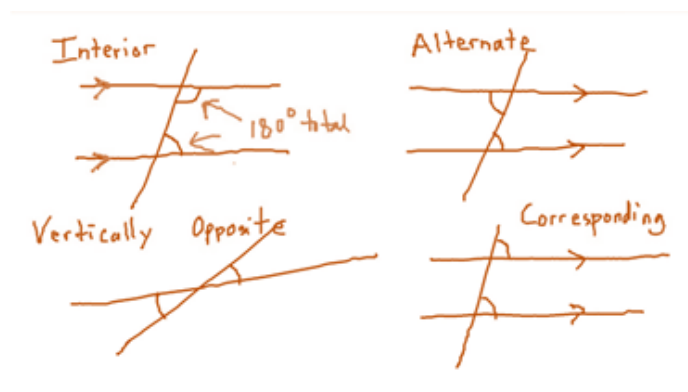


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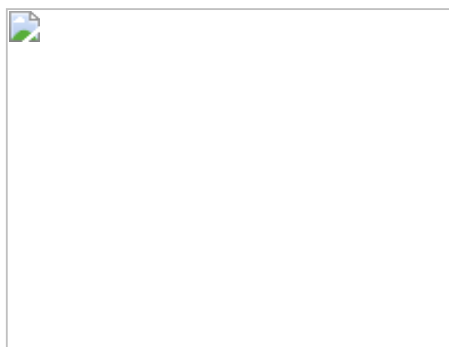
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NCERT Class 9 Solutions: Line and Angles (Chapter 6) Exercise 6.2 – Part 1

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Q-1 In the figure, find the value of $\angle x$ and $\angle y$ and then show that $AB \parallel CD$



Solution,

Give line of AB and CD and it is parallel to each other. Also give angle x and y

$$x + 50^\circ = 180^\circ \text{ (Linear pair)}$$

$$x = 130^\circ$$

Also,

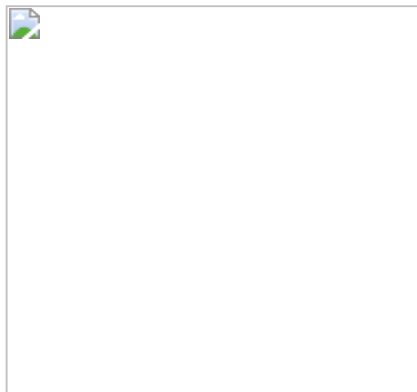
$$y = 130^\circ \text{ (Vertically opposite)}$$

Now,

$$x = y = 130^\circ \text{ (Alternate interior angles)}$$

Alternate interior angles are equal. Therefore, $AB \parallel CD$.

Q-2 In the figure, if $AB \parallel CD$, $CD \parallel EF$ and $y : z = 3 : 7$ find x.



Solution:

Given,

$$AB \parallel CD \text{ and } CD \parallel EF$$

$$y : z = 3 : 7$$

Now,

$$x + y = 180^\circ \text{ (Angles on the same side of transversal)}$$

Also,

$$\angle O = z \text{ (Corresponding angles) and,}$$

$$y + \angle O = 180^\circ \text{ (Linear pair)}$$

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

Equation,

$$y = 3x \text{ and } z = 7x$$

$$3x + 7x = 180^\circ$$

$$10x = 180^\circ$$

$$x = 18^\circ$$

$$\therefore y = 3 \times 18^\circ = 54^\circ (\because y = 3x) \text{ and}$$

$$\therefore z = 7 \times 18^\circ = 126^\circ (\because z = 7x)$$

$$\text{Now, } x + y = 180 \Rightarrow x + 54^\circ = 180^\circ \Rightarrow x = 126^\circ$$