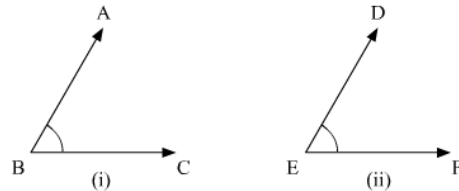




#### Lines and Angles Ex 8.4 Q24

**Answer :**

The figure is given as follows:



It is given that, arms  $BA$  and  $BC$  of  $\angle ABC$  are respectively parallel to arms  $ED$  and  $EF$  of  $\angle DEF$ .

We need to show that  $\angle ABC = \angle DEF$

Let us extend  $BC$  to meet  $EF$ .

We have  $AB \parallel DE$ .  $\angle ABC$  and  $\angle DEF$  are corresponding angles, these two should be equal.

Therefore,

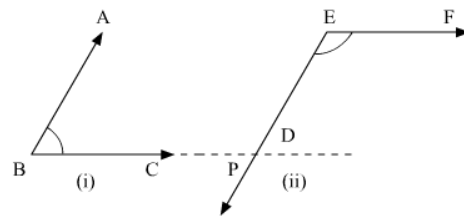
$$\boxed{\angle ABC = \angle DEF}$$

Hence proved.

#### Lines and Angles Ex 8.4 Q25

**Answer :**

The figure is given as follows:



It is given that, arms  $BA$  and  $BC$  of  $\angle ABC$  are respectively parallel to arms  $ED$  and  $EF$  of  $\angle DEF$ .

We need to show that  $\angle ABC + \angle DEF = 180^\circ$

Let us extend  $BC$  to meet  $ED$  at point  $P$ .

We have  $AB \parallel DE$  and  $BP \parallel EF$ . So,  $\angle BPE$  and  $\angle PEF$  are corresponding angles, these two should be equal.

Therefore,

$$\boxed{\angle BPE = \angle PEF}$$

Also, we have  $AB \parallel PE$ . So,  $\angle ABP$  and  $\angle BPE$  are consecutive interior angles, these two must be supplementary.

Therefore,

$$\angle ABP + \angle BPE = 180^\circ$$

$$\Rightarrow \angle ABC + \angle PEF = 180^\circ$$

$$\Rightarrow \angle ABC + \angle DEF = 180^\circ$$

Hence proved.

\*\*\*\*\* END \*\*\*\*\*

